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JANUARY-MARCH, 1895.

No. 1.

A DISCOVERY OF HORIZONTAL CURVES IN THE ROMAN TEMPLE CALLED "MAISON CARRÉE" AT NIMES.

(PLATES I, II.)

The purpose of this paper is to call attention to an important observation made in February, 1891, on the fine and well-preserved Roman temple at Nimes called the "*Maison Carrée*"—viz., that it is constructed with the optical refinement of the curved horizontal lines hitherto considered peculiar to the Parthenon and other Greek temples of the fifth or sixth centuries B. C. This is the first observation of the horizontal curves in a building wholly Roman and proves their continuance to a date three or four centuries later than was previously known.¹ This observation also antagonizes the current presumption of archaeologists that the imperial period was indifferent to this refinement or incapable of achieving it.

Herewith is the attestation of the present official architect of the city of Nimes, together with that of his predecessor in office, both of whom have been very helpful to me in the matter of measurements and friendly sympathy. These gentlemen had not previously noticed the curves; for the reason, as I believe, that they

¹ The small remaining portion of the architrave of the temple of Olympian Zeus at Athens shows the curve. This architrave is supposed by Penrose to date from Antiochus IV. (174 B. C.) The curved foundations date from Peisistratos. Opinions as to the date of the *Maison Carrée* vary between the first and second centuries A. D.

produce a perspective illusion as to the size of the building and hence present themselves to the eye as a natural effect, according to the principles of curvilinear perspective. Measurements such as are usually taken in surveying a building do not indicate the existence of a curve in the horizontals, because the width or height is estimated in such surveys by a single measurement or at best by two; taken at the extremities. At all events it is in point to observe that although measurements of the Parthenon were undertaken by Stuart and Revett about 1756, it was not till 1837 that the horizontal curves were seen and announced by Pennethorne and not till 1846 that they were measured by Penrose. There is an archaeologist of distinction resident at Nîmes, M. Aurès, who is thoroughly familiar with the observations of Pennethorne and Penrose and who has published measurements of the *Maison Carrée*. His measurements were devoted, however, to questions of ancient methods of metrology. They were taken for him by another person and do not, as published, include the curves. M. Aurès, who treated me with great courtesy, is of advanced age and so infirm that he was unable to examine the building with me. The following attestations from the architects Augière and Chambaud are therefore important.

I. "*Les mesures ci près² ont été prises avec l'assistance de M. Augière, architecte de la ville de Nîmes. Il constate avoir observé les courbes avec M. Goodyear, et il constate qu'il n'y a pas eu poussée dans la corniche du côté Ouest.³ Étant professeur de perspective M. Augière veut dire qu'il considère la théorie de M. Goodyear, sur l'effet perspective d'une ligne convexe en plan, nouvelle mais raisonnable. Quant à l'effet d'une ligne concave en plan à certains points de vue, c'est chose connue des professeurs de perspective.*"

(Signed), AUGUSTE AUGIÈRE.

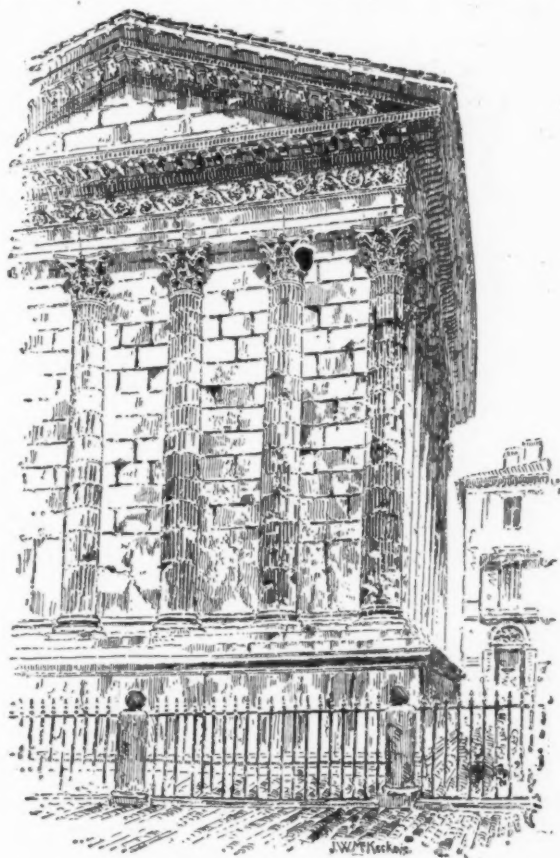
Architecte-Directeur des travaux publics de la ville de Nîmes, Professeur d'Architecture et de Perspective à l'École des Beaux Arts. Feb. 20th, 1891:

The second letter is as follows:

² This matter is written on the leaf of the note book containing the original measurements.

³ It was on this side that the observations for the cornice were taken as the curve is exaggerated on the East side by a movement in the masonry.

II. "*Le soussigné, Eugène Chambaud, Architecte de la ville de Nîmes en retraite, après avoir examiné avec M. Goodyear, les lignes courbes de la Maison Carrée, a constaté l'existence de ces lignes, comme étant dans la dite construction ; toutefois avec la réserve que la courbe de la corniche*



REAR OF MAISON CARRÉE AT NÎMES.

Drawn from a photograph to show the cornice curves.

du côté Est a été exagérée par une poussée de la toiture, mais aussi en constatant le fait qu'il y a courbe aussi de ce côté dans la construction originale, en vue du fait que la ligne des bases des colonnes est courbe de ce côté, comme sur les autres, et qu'il n'y a pas poussée dans la ligne

des bases ; en vue aussi que la poussée est loin d'être assez grande pour avoir produit la courbe de la corniche. Il estime que les théories de M. Goodyear, sur l'effet perspectif des courbes, sont raisonnables, et il remarque que la théorie sur l'effet de perspective d'une courbe convexe en plan est nouvelle mais possible. Il a remarqué avec lui que les variations dans les distances entre les colonnes sur quatre côtés du monument auraient sans doute un effet de perspective selon les idées de M. Goodyear. Les joints de la corniche du côté de l' Ouest ou il y a courbe de onze centimètres et demi, mesure de M. Goodyear, sont parfaits avec une seule exception qui n'est pas importante pour la question de la courbe.

Nîmes, le 23 Février, 1891.

E. CHAMBAUD."

The curves which are thus attested to exist in the masonry construction and to have been measured with official concurrence and assistance are convex curves in the exterior plan of the cornice on both long sides of the building of about five inches deviation from a straight line at their centre. The curves are partly produced by leaning out the walls and engaged columns at and near the centres of the sides. Part of the curves may be obtained by a gradually projected arrangement of the blocks of the cornice itself, but the cutting of its profiles and dentils is too rich and complicated to allow of a definite observation on this point, as long as the masonry above is concealed by the modern roof and gutter. Slight curves convex to the line of vision may also be observed in the walls and engaged columns of the temple at the level of the stylobate. Although the decorative carving of the temple, frieze, cornice and capitals is extremely rich, the masonry will not compare with that of the Parthenon or other Greek temples for refinement of quality or construction. The curves, and the masonry arrangements by which they are produced, correspond to what one might expect from the general distinctions between the art of the Empire and that of the v century B. C. in Greece. However, although the masonry is coarse and careless as compared with the Parthenon, there can be no doubt that the joints of the cornice masonry show close fitting and that they are without any of the breaks on the East side which a movement of masonry due to bulging from accidental causes would necessarily exhibit. One piece of the cornice on the West side, that nearest

the South corner, has slipped downward and has weathered badly at the exposed surface, but the joint has not parted even here. The curve of the East side cornice appears to be nearly double that of five inches which I measured on the West side, but as the joints have parted here, I took the advice of M. Chambaud not to measure this curve.

One result of this extraordinary deflection in construction—extraordinary, that is, in its amount, from the standpoint of the Parthenon curves (which are more than doubled here for the given length),—is to give a pronounced effect of a rising curve in elevation to the entablature and cornice of the long sides. As seen at an angle of forty-five degrees a curve convex in plan will produce the effect of an equal curve in elevation—so I am advised by experts in perspective. Thus the observer standing near the centre of one of the long sides of the *Maison Carrée* and looking at the cornice at an angle of forty-five degrees has the effect of a curve in elevation double that of the long sides of the Parthenon for the given length and about three times as great as the curves of the Parthenon at the ends of that building, which correspond approximately to the length of the long sides of the *Maison Carrée*. The eye would naturally discount this effect as being one of perspective and it is quite certain, whatever may have been the purpose of the curves, that this apparent increase of dimension is one of their results for all eyes. Even when the curve is noticed the optical illusion is the same, for it is absolutely impossible for the eye to detect the curve as being anything but the optical curve of a line seen in perspective when facing the sides of the building. It is only by sighting near the angles that the curve is seen to be in the masonry.

It was this appearance of a rising curve in elevation, as seen in a photograph of the *Maison Carrée* in New York in 1879, which led me since that time to believe that the Greek curves would be found in the *Maison Carrée*, and my visit to Nîmes was consequently made for the purpose of verifying this suspicion. The fact that Nîmes was settled by a colony of Alexandrian Greeks, gave an additional stimulus to my anticipations. It has always appeared to me improbable that the use of the Greek curves should have been unknown to the Roman imperial period,

seeing that our only authority regarding them in ancient literature is a Roman who recommended their use; and seeing, also, that it was the prescription of Vitruvius which first suggested to Pennethorne that the curves might be found in the Parthenon.⁴

My observations at Nîmes agitate once more the still undetermined question as to the purpose of the Greek curves in general. The explanation offered by Penrose⁵ starts from the tendency to an optical downward deflection ("alveolation") in the straight cornice line of the pediment, and supposes the rising curve of this line to have had the purpose of counteracting this optical deflection; but in the *Maison Carrée* nothing has been done to counteract this "alveolation" which is very apparent in this building for the pediments; so much so that it appeared to me that this downward curve has even been exaggerated by the masonry construction. It has been made probable by Thiersch⁶ that there is an "alveolation," or optical downward deflection, in the stylobate lines of a Greek temple as seen from below near the angles, and he supposes that the rising curves of the temple flanks were intended to correct this effect; but it is impossible that a bulging curve of five inches deflection was constructed in the *Maison Carrée* with reference to an "alveolation" of the side lines. Two considerations are conclusive on this head: (a) The "alveolation" was left without correction in the straight lines of the pediments, where it is naturally much more pronounced. (b) Thiersch does not claim an "alveolation" for the side lines except as seen near the angles, and here the bulging curve of the *Maison Carrée* could not produce the optical correction.

The German architect Hoffer, whose observations of the horizontal curves of the Parthenon were contemporaneous with those of Pennethorne, believed the curves to have had the purpose of increasing the apparent size of the building according to the principles of curvilinear perspective.⁷ This suggestion was re-

⁴ The existence of the curves in the ancient monuments appeared so improbable to the architect, Wilkins, who published a translation of Vitruvius in 1812, that he added a foot-note to the passage on the curves, intimating that such a refinement probably never existed in actual practice.

⁵ *Principles of Athenian Architecture.*

⁶ *Optische Täuschungen auf dem Gebiete des Architectur.*

⁷ *Wiener Bauzeitung*, 1838.

vived by Boutmy* in 1870. Both these students confined their explanations to a point of view assumed to be nearly opposite the centres of the building and at some little distance from it, and I think it has not been observed that a line or surface, concave to the standpoint of vision, may produce a perspective illusion from every standpoint of vision to which it is concave. According to the teachings of perspective experts, a deflection or curve in a line or surface supposed to be straight concave to the line of sight, throws the extremity of that line, by an optical illusion, to the point which that extremity would occupy in a straight line of greater length. It follows from this that a curving line not obtrusive to the eye may produce a perspective illusion from every standpoint of vision to which it is concave. The proposition that a line or surface with curve convex to the line of vision may produce a perspective illusion for every standpoint to which it is convex, can be demonstrated without mathematics. I was tempted to submit it to the architects of Nîmes above mentioned, and it now has the ratification of a professor of perspective. The proposition is probably novel. Should it meet wider acceptance it would not prove that the curves of the *Maison Carrée* had, among other possible purposes, a perspective intent; but it would prove that they have a perspective effect as result, and would consequently explain why they have so far escaped notice. The proposition may be stated for lines or surfaces convex to the line of vision and having apparently or approximately equidistant divisions, as follows: For every such line or surface assumed by the eye to be straight; given a point of view not opposite the centre of the line, the spaces nearest the eye are unduly widened and the spaces farther from the eye are unduly foreshortened—hence a perspective illusion. For every such line or surface assumed by the eye to be straight; given a point of view opposite the centre division, all other divisions are unduly foreshortened, and the centre division, which has increased width, as being nearer the eye, gives the norm of computation—hence a perspective illusion. The proposition is, therefore, that all architectural curves, in lines presumably or apparently straight, may produce a perspective illusion from whatever point viewed. In 1886 this

* *Philosophie de l'architecture en Grèce.*

proposition, in this shape, was verbally laid before a distinguished American architect and perspective expert, and was not received with disfavor. The most important effect of a curve convex to the line of vision in the upper line of a building is, however, without doubt, its tendency to exaggerate the ordinary appearances of curvilinear perspective, in this upper line, especially on near approach to the building. At points inside the angle of forty-five degrees the apparent elevation of that part of the cornice nearest the spectator is enormously increased, and the perspective effect of the descending lines, as seen on either side in perspective, is therefore enormously exaggerated. Plates I and II illustrate this effect in bird's-eye view. It is so much greater than the other effect I have suggested for a convex curve that the former seems hardly worth debating—unless we conceive that even the most delicate changes of appearance in dimension involve an optical mystification which was one result sought.

I should be sorry to damage the effect of a positive and matter of fact observation of great importance to archæologists by the introduction of theoretical matter, but the existence of a temple with curves confined to those convex in plan is undoubtedly outside the limit of explanations hitherto offered for the Greek curves. Moreover there must be a reason why a rather obvious phenomenon has hitherto escaped notice in a temple as well known as the *Maison Carrée*. No doubt the first impulse of any modern builder, architect or expert is to attribute deflections in the masonry of an ancient building to movements in the masonry due to accidental causes after construction and this cause of oversight must also be considered.

The intercolumnar spacings on the West flank of the *Maison Carrée* are as follows, measured from South to North in feet and inches—4, 2: 4, 3: 4, $3\frac{1}{2}$: 4, $3\frac{1}{2}$: 4, $4\frac{1}{4}$: 4, 5: 4, $3\frac{1}{2}$: 4, 3: 4, 3: 4, $4\frac{1}{2}$. The intercolumnar spacings on the East flank, measured from South to North, are as follows—4, 6: 4, 6: 4, 3: 4, $4\frac{1}{4}$: 4, 3: 4, $5\frac{1}{2}$: 4, $1\frac{1}{2}$: 4, 1: 4, $3\frac{1}{2}$: 4, 4. The intercolumnar spacings at the Façade (North) end of the temple are, as measured from East to West—4, $1\frac{1}{2}$: 4, $\frac{1}{2}$: 4, 3: 4, 1: $4\frac{1}{2}$. At the South end measured from East to West these spacings are—4: 4, 1: 4, $3\frac{1}{4}$: 4, 1: 4, 3.

The greatest variation in the intercolumniations of the Parthenon is about an inch and a half. Between the highest and lowest measurements here we obtain a variation of five inches. There does not appear to be any scheme in the Parthenon intercolumniations excepting that of optical mystification and it may be that these variations have no other purpose. The only scheme to which we find no exception in the *Maison Carrée* is that the central intercolumniations of each flank and of each end are wider than the spaces adjacent. Boutmy has announced a perspective scheme in the spacing of the metopes of the Parthenon which have a maximum variation of over three inches in favor of the central spacings, as against those of the angles.

My measurements at Nîmes were much assisted by introductions from Professor Reginald Stuart Poole, who was acquainted in advance with the anticipated results of my visit. M. Henri Révoil, Architect of Historic Monuments, allowed me to place ladders against the building, and M. Augière deputed several workmen from the municipal employés and one of his assistants to help me. The *Maison Carrée* is, however, including the elevation of the stylobate, as high as the Parthenon, and it was found necessary to employ workmen accustomed to repairing roofs. These scaled the building by knotted ropes hung from the roof, and after securing themselves beside the cornice by iron hooks and a body belt, were able to determine the curve of the cornice by dropping a plumb-line from three different points (the angles and centre) to the stylobate below. The points thus fixed were marked and the amount of deflection was then established by a surveyor's line. M. Chambaud has a very exact knowledge of the roof and cornice masonry of the temple, having personally inspected the joints of the cornice during repairs which he made on the roof, and his verdict on the questions of cornice masonry must be regarded as final.

II.

There is said to have been a colony of Alexandrian Greeks settled at Nîmes,⁹ and the influences of Greek art and Greek race are generally recognized for Southern France. This may

⁹ There is ancient authority for this statement, but I have lost my reference.

be an explanation of the survival of the Greek refinement of horizontal curves at this particular point. Inasmuch as the Greek curves are generally known as having been curves in elevation (not in plan), the existence of curves convex in plan on the long sides of the Poseidon temple at Paestum is a fact to be emphasized. Penrose supposes that curves at Paestum are confined to the pediments at the ends of the temple (curves in elevation), but Jacob Burekhardt attests the existence of convex cornice curves in plan on the long sides of the temple, and as being in the masonry construction and not owing to displacement.¹⁰ This observation by Burekhardt is noted by Thiersch. The latter assumes, without proof, an accidental cause. Burekhardt confines his explanation to the point that the curved line has more beauty than the line which is mathematically straight, and that an effect of life and grace is obtained by its use. Since we now have at least two cases of classic temples showing curves in plan on the cornice line, as distinct from curves in elevation, it seems wise to publish observations which I have made for curves in plan, convex to the line of vision, in the temple courts at Karnak, Luxor, and Edfou. Mr. John Pennethorne, who discovered the curves of the Parthenon in 1837, had discovered two years earlier (1835) convex curves in plan in the cornices of the second court at Medinet Habou; but this observation was not published until 1878, and seems to have been utterly overlooked since that date by all Egyptologists. These curves have eight inches deflection on the short side of the court and four inches deflection on its long side. They are an excellent illustration of the optical illusion which results from a curve convex to the line of vision. It was impossible for me when standing in the court to distinguish these lines from the curves of perspective. Every person who has been in the second court at Medinet Habou, without noticing these curves, must have discounted their effect into an appearance of greater length in the sides of the court; and it should be borne in view that a knowledge of the existence of these masonry curves is not the slightest detriment to the optical illusion. It is only on the roofs of the porticoes and by sighting from the angles that the curves are detected as independent of optical effect. It may be added

¹⁰ *Der Cicerone*, vol. 1, p. 5.

that Egyptologists are generally agreed in attributing a purpose of perspective illusion to the arrangement of apartments in certain Egyptian temples, as regards the gradual descent in height of apartments, the gradual ascent in line of pavement, and the gradual narrowing in of apartments in the direction away from the entrance. This is mentioned, for instance, by Professor Maspéro, also by Professors Reginald Stuart Poole and Rawlinson.

My own observations in Egypt supplementary to those of Mr. Pennethorne, may now be noticed. At Edfou I observed curves of plan in the cornices of the great court convex to the line of vision. I measured the curve on the roof of the East side of the court and found that it amounted to ten inches. I believe the length of the side is 140 feet. This cornice has moved forward undoubtedly, as shown by a parting of its joints and by the parting of joints on the inside faces of the columns supporting it, but I measured curves on each of the four sides of the court *at the level of the pavement*, all convex to the centre of the court, each with a deflection of one and a half inches. From the construction of the courts at Medinet Habou and at Edfou, it is clear that the curves were obtained in the Egyptian cornice by a gradual leaning forward of the columns of a court, the lean to the front increasing as the columns approach the centre. At Medinet Habou, for instance, the curve in the line of columns near the bases is not perceptible to the eye when sighting for it, although the maximum of curvature in cornices is eight inches and instantly detected by sighting on the level of the roof. This method of construction would explain the displacement of the cornice at Edfou, which has exaggerated the curves, for all earthquakes and other forces tending to disintegrate the masonry would tend to weaken the building in the direction to which the columns were already leaned.

I found curves in the lines of the columns at Luxor in every court, and in each case convex to the centre of the court. These curves measured from one and a half inches to seven inches deflection. The central columns on two sides of the rear court at Luxor are shored up by beams since the excavation, finished in 1891, and would otherwise fall forward into the court. This movement of the columns is to be explained by an original con-

struction, like that at Medinet Habou and Edfou. At least that is my suggestion. The great court at Karnak was still so filled with rubbish in 1891 that one could ascend to the line of the architraves on both portico sides of the court. By sighting along the line of these architraves I verified the existence of very pronounced curves of several inches, convex to the centre of the court. I think that these curves may be owing, to some extent, to masonry displacement, but that this displacement has been a movement toward the centre of the court, owing to an original lean of the columns and original curve of the architraves in this direction. At Medinet Habou the portico roofs of the second court are in fine preservation, and there has not been the slightest parting of joints or displacement of masonry which could suggest an accidental cause for the curves.

We will notice finally, once more, that the effect of such convex curves in the upper line of a building is to increase the appearance of dimension to an extraordinary degree on near approach; that a convex curve is equal in effect, at an angle of forty-five degrees, to a curve of the same deflection in elevation; and that two writers, viz., Hoffer and Boutmy, have attributed the Greek curves in elevation to a purpose of perspective illusion.

All these various facts may be considered as helpful to an understanding of the curves of the *Maison Carrée* and of the temple of Poseidon at Priestum.

I published an article in Scribner's Magazine for August 1874, entitled "A Lost Art," in which the purpose of optical illusion was ascribed to certain curves in masonry of the cathedral and other churches at Pisa. The announcement that deceptive perspective schemes in the arrangement of arches, pier spacings, and walls, is a widespread phenomenon in Mediæval cathedrals is probably original with me and I shall soon publish a work on this subject. The more widespread in time and place the use of optical refinements in architecture appears to have been, the greater probability attaches to each new instance of demonstrated intentional construction in which such an effect was obtained, that the effect obtained was intentional.

New York City.

WM. HENRY GOODYEAR.

February, 1895.

SOME RECENT RESULTS OF THE UNIVERSITY OF
PENNSYLVANIA EXCAVATIONS AT NIPPUR,
ESPECIALLY OF THE TEMPLE HILL.

[PLATES III, IV, V.]

The expedition to Babylonia which was sent out under my direction commenced excavations at Nippur February 6th, 1889, and continued them for two months. Work was resumed January 14th, 1890, and continued for the space of four months. During the first year we worked with a maximum force of 200 men. Naturally a large part of our work was tentative, especially the work upon the temple. During the second year we worked with a maximum force of about 400 men; and while we employed a considerable number of these in digging for tablets and making soundings in various parts of the extensive mounds, by far the larger part of the force was, from the outset, concentrated on the systematic exploration of the Temple Hill.

In 1892 a second expedition was sent out under the direction of Mr. J. H. Haynes, a member of my staff during the first two years, who had also had experience with other expeditions, especially the Wolfe expedition and the expedition to Assos.

Mr. Haynes commenced excavations April 11th, 1893, and continued them until April 3d, 1894, resuming work again June 4th, 1894, and continuing down to the present time. His average force of workmen employed has been about 50, and from September 1st, 1893, until November 24th, 1894, this force was concentrated upon the Temple Hill, continuing the systematic excavations which had been carried on at that point, and especially upon the ziggurat of the temple and its immediate surroundings.

A considerable section of the temple in front of the ziggurat to the southeast, has been removed, stratum after stratum, and the ziggurat itself followed down from its latest form to its earliest

with great care. The complete results of this work cannot be published until Mr. Haynes' expedition has returned, and there has been an opportunity for him and others to work up those results; but combining what was done under my direction during the first two years with what Mr. Haynes has so far reported for the subsequent two years, I am able to present some sort of a sketch of the history of the great temple of Bel at Nippur.

The accompanying plan (Plate III) will give some idea of the appearance of the temple enclosure at the close of the first two years' excavations. The shaded portions on this map represent actual excavations. It will be observed that the ziggurat has wing-like or buttress-like projections on all four sides and is curiously irregular in form. The ziggurat, as here represented, is composed of two stages. About it, on all sides, we find rooms or corridors. The ziggurat, with the various rooms, corridors and the like which surrounded it, was enclosed by a huge wall, which towards the southeast stood to the height of over 60 feet, and was almost 50 feet thick at its base. On the top of this wall, on the southeastern side, we found a series of rooms. There were irregular, tower-like masses at three of the corners of the great wall. The western corner, and a part of the southwestern side near the western corner, could not be found at all, having been apparently destroyed by water. At the eastern corner there was a singular mistake, owing to the lack of instruments of precision, by which the angle was made obtuse instead of right, thus giving the enclosure a curiously irregular shape. The corners of the great enclosure and of the ziggurat itself were not accurately orientated—the northern corner of the ziggurat pointing 12 degrees east of the magnetic north.

But to commence with the section A, B: the apparent level of the Shatt-en-Nil, or canal bed, which passes through the mounds of Nippur, is several meters above the true level of virgin soil, the old canal having filled up gradually with washings from the mounds about it. I sank a shaft to the depth of 19.3 metres from the 14 metre level, or 5.3 meters below the canal level, on the outer surface of the great wall, without reaching bed earth; and Mr. Haynes reports a depth of 68½ feet, or almost 21 metres, from the surface of the 14 metre level to virgin clay in a shaft

sunk by him in the great trench on the temple plateau, which would make virgin soil 7 metres below the canal level. I think this must have been an exceptional place, and that the true soil level is in general not much more than 5 metres below the canal level. My excavations were actually continued some two weeks after this section was completed, with the result, so far as depths go, of reaching 19.3 metres in the trench outside of the great wall instead of 18, as there indicated; of removing the inner wall, and of carrying the trench inside of the great wall and between it and the ziggurat down to 11.5 metres below the 14 metre level, at which depth we found the foundations of walls of the famous Sargon, king of Akkade, 3800 B. C. The trenches were connected with one another by a tunnel passing through the great wall, while a similar tunnel led from the trench outside of the great wall, through the mass of rubble before it, to the excavations marked "Shrine of Bur Sin."

The greatest depth reached under the ziggurat itself is not shown by this section, since it was off the line. By means of the trench, marked 56 on the plan, and the tunnel, marked 10, a point 2 metres below plain level was reached under the western corner of the ziggurat.

Commencing at A, on the level of the Shatt-en-Nil, there was a low wall-like line of mounds rising 3 to 4 metres above plain level, with a gate-like breach in the middle. This proved to contain a row of booths or small rooms with walls of mud brick. In the particular room or booth through which the section line passes, in the northern corner of the room, was found a large number of inscribed objects of ivory, glass, turquois , agate, malachite, lapis lazuli, magnesite, feldspar, *etc.*, some in the process of manufacture and some complete, together with material not yet worked. All these had been contained in a box which had been buried by the falling in of the earth of the walls or roof and decayed away, leaving signs of its existence in long copper nails, in the position of the objects when found, and in some slight traces of oxidation left in the earth by decaying wood. These objects were found from 1.5 to 2.5 metres below the surface. The inscribed objects belonged to kings of Babylon of the Cossean dynasty, from Burna-Buriash, 1342 B. C., to Kadashman-

Turgu, 1241 B. C. No later buildings had been erected at this point. The walls of the booths rested upon a foundation of earth heaped up for the purpose, but where we carried excavations lower, as in the breach-like opening, we found that other buildings had existed there at an earlier period.

Behind this outer low wall-line was a depression of the surface, beyond which again the ground sloped up quite steeply to the summit of the temple plateau, which was 14 metres above plain level. On this slope, at the point indicated in the section, was found the shrine of Amar-Sin or Bur-Sin, as the name is variously read, indicated on the plan at No. 11. This shrine stood on a platform of burned brick. Its walls were built of burned brick laid in bitumen, and from 7 to 14 courses were still in place. Almost all of the bricks bore a brief dedicatory inscription to Bel by Bur-Sin, king of Ur, about 2400 B. C., and longer inscriptions by the same monarch were found on two fine diorite door sockets in the two doorways. This building faced towards the ziggurat, as shown on the plan. Behind it, and belonging to it, was a well, also of burned brick. Apparently there had been statuary and ornamental basreliefs in connection with this shrine. An excavation of the gully beneath it revealed a pair of clasped hands from a diorite statue, which must have been similar to those found at Tello, and several inscribed fragments, including three fragments of basreliefs. An archaic looking mortar of volcanic stone was also found at the same place. These objects are reproduced in No. 2 of Plate v.

As we found it, this little building faced against a huge towering wall, under the débris from which it had been buried, but at the time of its erection either the wall did not rise above the level of the platform of this temple, or, if it did, there was in it a large opening serving as an entrance to the temple at this point. Walls of brick of Ur-Gur (2800 B. C.) are buried in the great wall. These walls were part of a causeway ascending from a point about on a level with and nearly in front of this shrine of Bur-Sin, to the top of the first terrace of the ziggurat. This shrine, therefore, reminds me by its position of the "high places of the gates," mentioned in the books of Kings (as, for example, II K., 23:8).

At a later date a certain King Gande scratched his inscription on the side of one of the door sockets of Bur-Sin. Of this king we know nothing, except that he caused his name to be scratched on the work of several older kings at Nippur; and his inscriptions also stand by themselves on three large, rude marble stones. His inscriptions are extremely barbarous in appearance. On top of the ruins of this shrine of Bur-Sin we found a poor wall of mud brick, with no clue to its age, and above this a mass of debris which had fallen from the great wall above.

The great wall was of really colossal proportions. It had a slope of one in four. At the bottom it was 15 metres in thickness, and at the top, as it at present stands, 9 metres. For 14 metres below the level of the plateau this wall was built entirely of unbaked brick, but below this, for 5.3 metres, it consisted of earth faced with a casing of baked brick .90 m. in thickness, and the slope of this lower part was less than that of the upper. That the wall was not homogeneous and all constructed at one time was clear, among other things, from the fact that a portion of the brick causeway, by which in Ur-Gur's day access was had to the upper stages of the ziggurat, was imbedded in it. A wall had evidently existed at this point from time immemorial, repaired and built upon by men of many ages, until it reached its present height. Originally, as shown by the fragments of a transverse wall found at a low level, there was an entrance over this wall on the southeastern side, by means of steps or an inclined plane; and as late as the time of Bur-Sin there was still an entrance at this point. At the time of the last great reconstruction this wall was raised to a much greater height, perhaps for purposes of defence, and there is no trace of an entrance in front. Rooms were built upon this last wall, as shown in the plan. On its inner side this wall was intended, in the last reconstruction, to be above ground to the depth of 5.5 metres only, the rest being a retaining wall to enclose a terrace. That terrace, as we found it, was composed largely of debris, but in many places, especially along the line of the walls, was found a filling of unbaked bricks in large square blocks. A somewhat similar wall surrounded the temple enclosure on all sides, and each side has roughly an outside measurement of 200 metres, excepting for the difference caused by the

fact that at the eastern corner, as already stated, by some mistake the angle was made obtuse instead of right. The corners of the wall, as of the building in general, point approximately toward the cardinal points, in such a manner, however, that the northern corner is 12° east of north. It may be added that I observed similar inaccuracies of orientation at Mughair (Ur) and Warka (Erech). The orientation of Babylonian buildings was merely approximate, and I am inclined to think that it was determined originally by the trend of the valley and the prevailing winds rather than by astronomical observations.

Within this outer wall on the southeastern side of the temple there was, as will be seen from both the section and the plan, an inner wall with two almost circular towers. The depth of this wall was 9.5 metres. It evidently was in existence at the time of Ur-Gur, and was perhaps first built by him. It must have been rebuilt and added to from time to time until it received its present form at the time of the last great reconstruction. As we found it, in the upper 5 metres of its surface it was beautifully plastered or stuccoed, while the lower 4.5 metres consisted of plain unplastered blocks of unbaked brick. A section of this wall was ultimately removed as far as the tower marked 63 in the plan, in trench 1; and that trench itself was carried a metre lower throughout than is shown in the section. This was done by me. Mr. Haynes more than doubled the breadth of this great trench, extending it toward the northeast, and also carrying it northwestward through the projecting southeastern wing of the ziggurat up to the line of the inner and more ancient ziggurat. He also removed all additions to the ziggurat itself until he had reached the original structure of Ur-Gur.

As will be seen from the plan and section, the great trench was carried in the first two years only up to the southeast wing of the ziggurat; but another trench was carried around the entire ziggurat, and that structure, a solid mass of brick and mud-brick, was explored through all its strata by means of tunnels and cuts. By this means we were able to ascertain that there was another and older ziggurat inside of that which our excavations had laid bare. The cut through the core of the ziggurat (No. 52) showed us that the depth of the mass of unbaked brick was 23 metres

from its highest point. With the exception of the outer casing belonging to the last great restoration, this mass was homogeneous in construction, consisting of unbaked bricks of small size, and in shape not unlike the ordinary bricks in use to-day. These were the bricks of Ur-Gur. They were laid in three different ways: first a layer on the edge, with the flat sides out; then a layer on the edge, with the ends out; and then a layer on the flat side, with the edges out. These bricks were often somewhat crushed out of shape by the weight resting upon them. Below the ziggurat, at the point of cutting (No. 52), we found first a metre of black ashes, and then a metre of earth, with occasional fragments of pottery. When we tunneled beneath the ziggurat at its western corner, 26 metres below the level of the summit, we found a drain of pottery rings, a fragment of a wall of baked bricks, plano-convex, the convex surface marked with thumb grooves, precisely similar to those shown on figures 15 and 16; an illegible fragment of an unbaked tablet, and a beautiful jade axe-head.

In a cutting at the other end of the ziggurat (No. 53), which descended about 9 metres from the top, we found so many bricks and the like as to suggest the existence on the summit of the ziggurat at some period, of a brick structure of some sort; but all surface layers of the ziggurat of the later and earlier periods alike were so ruined and worn away by the action of water that it was impossible to reach certainty on this matter.

As will be seen from the plan, the ziggurat, as discovered, was peculiarly irregular in structure. On both sides of the northern corner (No. 54) was a paneled wall of brick. This is a part of the ziggurat of Meli-Shiha. Everywhere else this ziggurat was buried under a new wall of huge blocks of mud-brick. Dotted lines at Nos. 38, 7, 49, 8, *etc.*, on the plan show remnants of older brick structures in various parts of the temple area, notably a grand tower at the northern corner (No. 38), buried in the mud-brick buildings of the last restoration.

Space will not permit an extended description of the meaning of the accompanying plan. Excavations were made, as will be seen, over a large extent of space, and in a general way the temple in its last reconstruction was laid bare.

In view of the great size of the temple—which covered within its inner walls a surface of about eight acres—it was impossible to excavate the whole of it systematically, removing stratum after stratum. For this purpose we chose, as shown in Fig. 2 a section immediately in front of the ziggurat to the southeast, between the ziggurat and the great wall, and conducted a large trench with a view of determining the successive strata. This enabled us to treat also the wall on one side and the ziggurat on the other. Ultimately it was found necessary to remove consid-



FIG. 2.—EXCAVATIONS ON THE S. E. SIDE OF THE ZIGGURAT OF THE TEMPLE OF BEL (June 5, 1894).

erable portions of the ziggurat in order to get at the original constructions, and to carry the large trench around the ziggurat on all sides.

Wells and similar shafts were sunk at other parts of the temple, wherever a favorable opportunity seemed to present itself, for the purpose of confirming, checking and reinforcing the results obtained from the excavation of the space in front of the ziggurat; but in giving the result of the excavations for the purpose of determining the history of the temple, I shall confine myself to the large trench in front of the ziggurat and to the results obtained in the excavation of the ziggurat itself, premising that there are still many matters which need to be worked out more fully, and which can be only tentatively given until the full re-

sults of Mr. Haynes' work are at hand, and have been compared carefully with the result of the work of the first two years.

Before excavations began the ziggurat was an almost conical hill, known to the Arabs as Bint-el-Amir (Daughter of the Prince). Around this, on all sides, was a plateau, seamed here and there with very deep gulleys. The general height of this was 14 metres (see for general appearance of mounds PLATE IV).

On this plateau we found, first of all, a surface layer of $2\frac{1}{2}$ to $3\frac{1}{2}$ feet of earth. In this, close to the ziggurat, on the southeast side, were poor walls of mud brick, remains of a number of rooms or huts of a late period. To the northwest of the ziggurat we found two or three Jewish bowls, such as were also found in great numbers in a Jewish village on another hill, in which latter case coins of the Kufic period gave us as a date the VII century after Christ. Here and there on the plateau of the ziggurat were coffins and tombs, which are to be ascribed variously to the Parthian, Sassanian and Arabic periods, although no remains were found which would enable us to date any of them with precision.

The remains in this upper layer of earth point to a time when the temple was no longer a temple, but when the plateau and Bint-el-Amir were merely a *tel*, the latter affording protection, and a side hill for the building of huts, and the former a suitable place for burial, according to the ideas of the people. In this stratum, very little below the surface, was a layer of fine white ashes, pretty evenly distributed over the surface of the plateau, evidence apparently of the use of the hill by alkali burners.

Below this later stratum, or these later strata of earth, we came to a series of constructions which belonged together, constituting one whole (Fig. 3). Walls of unbaked brick stood to the height of $14\frac{1}{2}$ to $15\frac{1}{2}$ feet. To the southeast, northeast and southwest of the ziggurat were rooms or houses; to the northwest and north were very fine series of corridors. The whole, as indicated in the plan (PL. III) was bounded by a vast retaining wall. On the southeast side the rooms or houses were contained within an inner wall, which was relieved by two singular solid towers of a conical shape. Outside of this wall, and between it and the great retaining wall, was a huge corridor. Through the inner wall was no door, but passage to the ziggurat was obtained by a circuitous

route around to the south and southwest. The walls of the rooms and corridors of this series were in almost all cases finely stuccoed with a plaster of mud and straw, smoothly laid on, and many of them had been tinted, but always seemingly in solid colors.

The accompanying sketches and plans by Mr. Joseph A. Meyer, Jr., who has been with Mr. Haynes for the last year as draughtsman, will give some idea of the appearance and character of the rooms to the southeast and east of the ziggurat. All of the



FIG. 3.—ROOMS S. E. OF ZIGGURAT OF LATE BABYLONIAN PERIOD.
EXCAVATED AT BEGINNING OF SECOND YEAR.

rooms on this level were occupied during two or three successive periods, as is shown by the walling up of doors on lower levels and the opening of others on higher levels, the building of threshold upon threshold, *etc.* The accompanying sketches of Mr. Meyer give a specimen of a house occupied in three or possibly in four successive periods, as shown by the doors. I can-

not do better than to repeat Mr. Haynes' words with regard to these sketches:

"Fig. 4 gives a sketch in perspective of the street shown in the accompanying plan (Fig. 5). It looks towards the south-southwest, and shows its continuation along the face of the south-

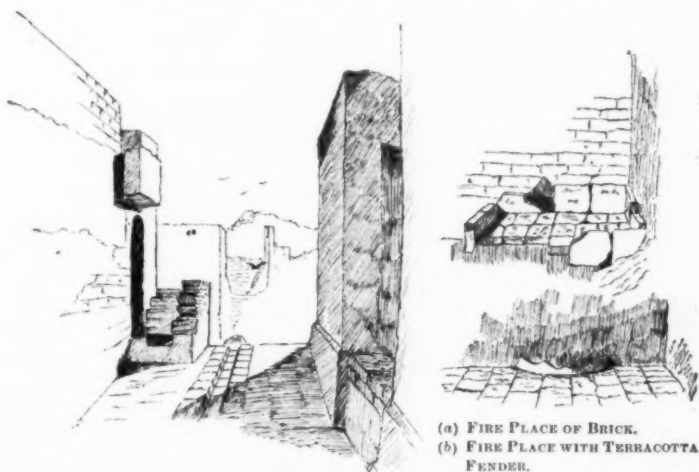


FIG. 4.—A STREET IN THE TEMPLE ENCLOSURE,
S. E. OF THE ZIGGURAT (July 5, 1894).

eastern buttress of the ziggurat, and under the steps on the opposite side of the great trench. In the middle of the unpaved street is a well-made gutter of burned bricks. The masonry of combined crude and burned bricks, in the left hand middle distance, shows a stairway descending from the filled-up street of what seems to be a well-defined period in the occupancy of these houses, and the continued use of the street, to the lower room of a house, that was continuously occupied and kept free from accumulating earth long after the street and the neighboring houses had become filled to a higher level with earth and débris, even after the doors of other houses had been raised to enter the street over a low threshold, sometimes of burned, often of crude bricks. . . . The walls of these houses clearly show three distinct periods in their occupancy. After the first occupation, during which time the street and many of the houses were filling with earth,

the walls of crude bricks were at least twice raised to a higher altitude, and twice were the doors carried upward to a corresponding height. The house in the left of the accompanying sketch (Fig. 4) shows three doors marking the three clearly-defined periods in the history of these houses. The lower door, with the segmental arch, belongs to the first period; the second door was closed by a mass of crude brick, which projected beyond the face of the walls; and the opening above this projection is the ruined door of the third and last discernible period.

"Figure 4 also shows toward the right hand sketches of two fireplaces. . . Figure 6 gives the cross-section and ground-plan of the street at the point of the door shown in the left hand of the foregoing sketch. It also shows cross-section and elevation of the doors of the first and second periods, belonging to the above houses, and shown in the sketch and in the section and plan of the street given in Figs. 4 and 5.

"Figure 7 is a sketch of the domestic pottery taken from this series of rooms. . . The large vase in the centre of the group was perforated—probably to allow the escape of water. It was sunk below the floor of earth in the northern corner of the room numbered 121 on the accompanying plan (Fig. 5). Around

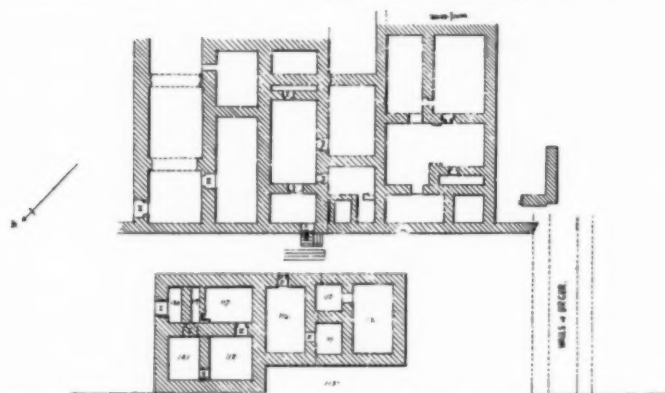


FIG. 5.—HOUSES AND STREET S. E. OF THE TEMPLE OF BEL (July 6, 1894).
Scale, .021 in. = 1 ft.

the jar's mouth was a bit of bitumen cement, apparently designed to convey water into the jar, which would seem to have served as

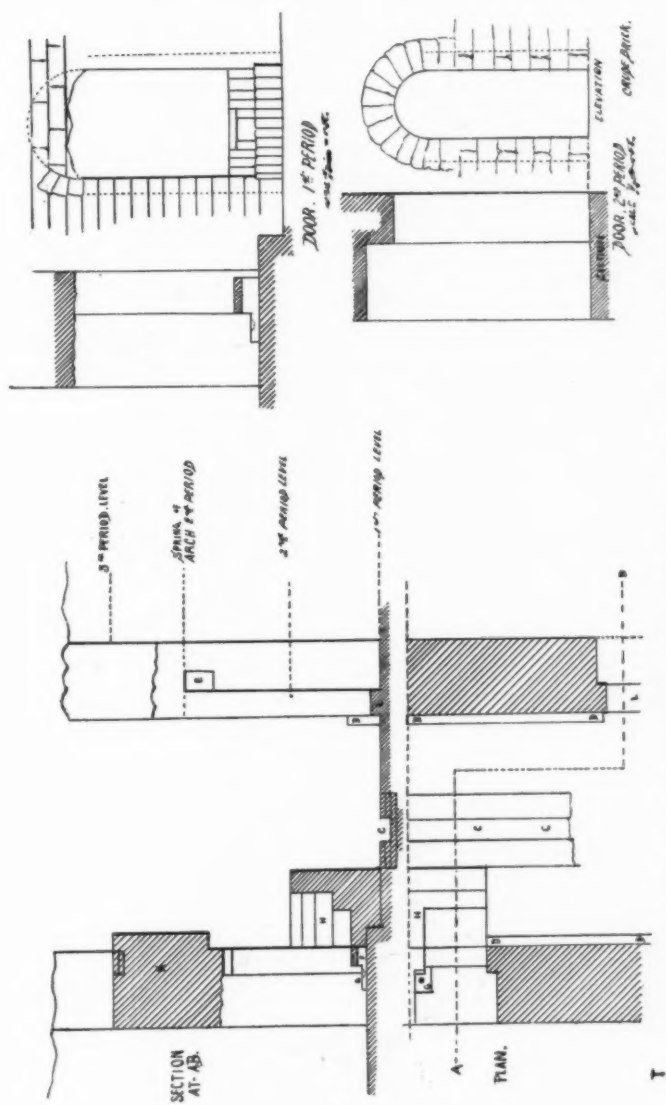


FIG. 6.—PLAN AND SECTION OF A STREET S. E. OF THE ZIGGURAT. (Scale, .125 in. = 1 ft.)

- A. B. Line of the section.
- C. Gutter of burned brick.
- D. Projection of foundation.
- E. Niche in door jamb, second period.
- F. Passage for water under the threshold.
- G. Brick door-socket.
- H. Steps leading down from level of second period.
- K. Wall filling the door, third period.
- L. Brick threshold, first period.
- M. Step on level of first period.

a drain, although a more unsanitary method of plumbing could scarcely be devised. Drainage was generally effected by a sluice under the threshold of the door into the street, or by a small drain through the wall of the house, also into the street, the sloping floors facilitating the fall of the water into the drain."

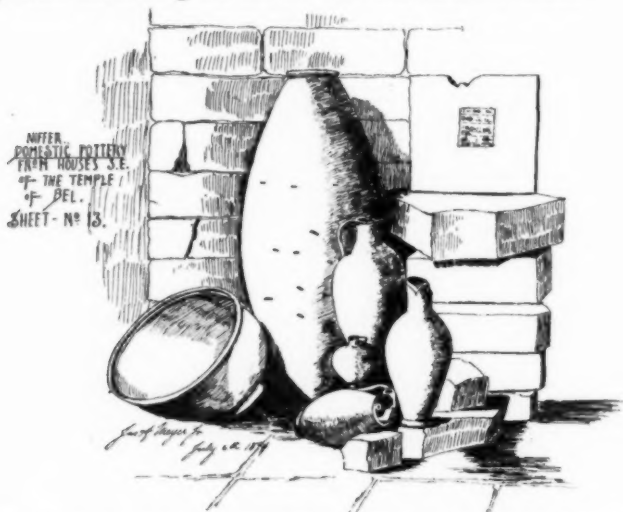


FIG. 7.—DOMESTIC POTTERY FROM HOUSES S. E. OF THE TEMPLE OF BEL.

Figure 8 exhibits in detail the curious and interesting door socket and threshold of burned brick seen at G on Fig. 6.

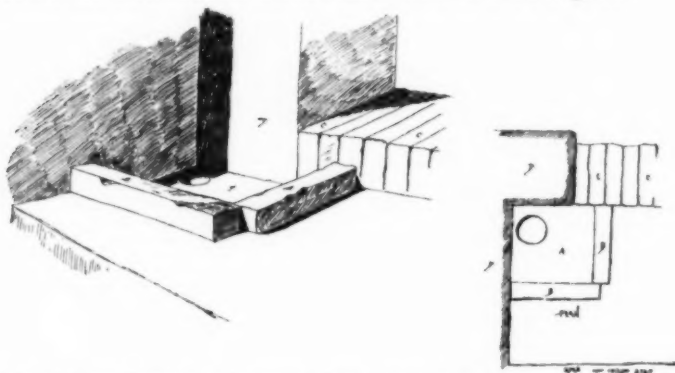


FIG. 8.—DOOR-SOCKET OF BURNED BRICK WITH PART OF THE THRESHOLD.

Figure 9 exhibits the drains and ventilators found in the walls of houses of the first of the three periods here represented.

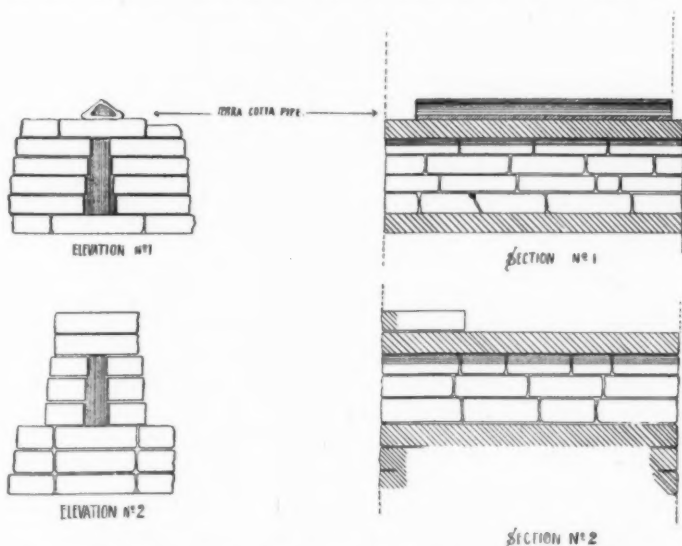


FIG. 9.—VENTILATORS OR DRAINS FOUND IN STREET WALLS OF HOUSE OF THE FIRST PERIOD S. E. OF THE ZIGGURAT. (Scale, .445 in. = 1 ft.)

It was evident that these rooms or houses were occupied during a considerable period of time. Some pottery and terracotta figurines of Greek work (Pl. V, 1) show that a portion of that time at least was in the Seleucidan period, but there are no remains which enable us to fix either a *terminus a quo* or *ad quem* for these buildings. I am inclined to ascribe their origin to the later Babylonian empire, partly on the ground of general similarity to other structures of that period found in Babylonia. The cruciform shape of the ziggurat is, to be sure, unlike anything else which has been discovered, but the relation of these rooms or houses to the ziggurat is in general the same as that of the rooms or houses unearthed by Hormuzd Rassam at Borsippa to the ziggurat of the temple of Nebo built by Nebuchadrezzar.

As already stated, these buildings were removed in a line between the central portion of the ziggurat and the great wall to

the southeast, during the second year of my excavations, and a large trench was conducted at that point through the successive strata underlying these buildings. This trench was very much enlarged by Mr. Haynes and carried still deeper. The general results of the examination of the successive strata at this point were as follows:

The houses or rooms described above had their foundations 18 feet below the surface, and rested upon earth, well packed together, 3 feet in depth. This again rested upon a mass of rubble and débris containing no walls, but great quantities of bricks and fragments of bricks with inscriptions of Meli-Shiha, and also bricks with green glazed surfaces. The same stratum was found at the same depth on the northwest side, on the southwest, and on the northeast—that is, on all four sides of the ziggurat. This would seem to indicate that there had been a very thorough demolition of some former structures before that restoration of the temple which gave the ziggurat its cruciform shape and surrounded it with the buildings of unbaked brick which have been described above. It would also seem that the last important builder before the reconstruction, which I have referred to the late Babylonian empire, was Meli-Shiha. This Meli-Shiha, who, as we shall find shortly, played a very important part in the reconstruction of the temple, was identified by Prof. Hilprecht, in his *Old Babylonian Inscriptions* (p. 55), with Meli-Shikhu, a king of Babylon of the Cassitean dynasty, who ruled 1171–1157 B. C. Now, however, on the basis of further examination of more inscriptions, Prof. Hilprecht reads the same not Meli-Shiha, but Ashurbanipal, thus changing the date to 669–626 B. C.

The mass of débris and rubble, as stated, was about 4 feet in thickness. Below this, to the southeast of the ziggurat, and extending as far as the inner wall with the round towers, indicated on the plans, there existed, apparently as late as Meli-Shiha's time, an open court paved in brick. Various fragments of pavements were found in different parts of this space, and at one place three successive pavements occurred within a space of five feet. Inscribed bricks found in some fragments of pavement show that one of these was the work of Ur-Ninib, king of Isin, perhaps about 2600 B. C. The other pavements consisted of uninscribed

bricks, and it is therefore impossible to assign to them a certain date until further excavations at the north and south shall discover buildings connected with this platform which may enable us to do so.

During this whole period the line which is now marked by the inner wall on the plans seems to have been the boundary of this court toward the southeast, and the two conical solid towers which were exposed by my excavations as forming part of the last great reconstruction of the temple, appear to have been in existence at the same place during this whole period. These great towers I am inclined to compare with the columns called Jachin and Boaz before the temple of Yahweh, at Jerusalem, with the similar columns before the temple at Hierapolis, and before Phœnician temples. Similar columns also existed in temples in Arabia, and the towers found by Bent in his excavations in Mashonaland seem to be of the same character. I suppose these towers, therefore, to have been sacred pillars representing the principle of life—gigantic, conventionalized phalli. They do not differ in shape or position from the columns used in the temples mentioned, but only in material and size.

At about 30 feet below the surface of the plateau of the temple, to the southeast of the ziggurat, we came upon a pavement of Ur-Gur, about 2800 B. C. This was of crude brick eight feet thick at its thickest point. It constituted an enormous platform or terrace, on the northeastern edge of which stood the ziggurat, while the southeastern part, as far as the towers, was an open court. This court was flanked, at least on part of its northeastern side, by buildings, but its further dimensions we do not know. Immediately below this was found at one point another pavement of bricks of unusual size, 18 and 20 inches square, with a thickness of three inches. This pavement was identified by Mr. Haynes as a pavement of the time of Naram-Sin, king of Akkade, 3750 B. C., or of Sargon, his father, 3800 B. C., by comparison of inscribed bricks of these same monarchs found elsewhere. Immediately to the northwest of the temple is a plain, bounded on the northern side by a wall line, which seems to be the outer wall of the city at that point. I conducted excavations here in the second year of my work, and later Mr. Haynes did the same with

greater success. This wall was found to consist in its lower part of unbaked bricks, stamped with the stamp of Naram-Sin, king of Akkade, the stamped face turned down. Immediately above this, with no intervening work, was found a wall of Ur-Gur. The bricks of Naram-Sin were of singularly large size, of well-mixed clay, tempered with chopped straw, carefully moulded and thoroughly dried, so as to attain an unusual hardness and firmness of texture. The bricks of Ur-Gur are of almost equal excellence, but of small size, and of a shape much resembling our ordinary modern bricks. So characteristic are the bricks of Ur-Gur that it is generally possible to determine a structure of his without inscriptions. The bricks of Naram-Sin, and of Sargon, his father, seem to be equally characteristic in a quite opposite direction; and it seems, therefore, safe to assign this fragment of a platform to one of these kings, especially since their work was immediately below that of Ur-Gur in the outer city wall.

It should be added that the platform of Naram-Sin or Sargon was not coterminous with that of Ur-Gur above it, for at various points in the great trench and elsewhere on the plateau I discovered walls of unbaked brick, among which were three door sockets of Sargon, king of Akkade—two of them apparently in place and one inverted. I also found at this level a clay brick-stamp of the same king. There were also found here quantities of vases and vase fragments, chiefly in marble, of a new king, "Alu-Sharshid, king of the city," who has been identified by Prof. Hilprecht as of the same dynasty, and approximately, therefore, of the same time as Sargon and Naram-Sin. Other fragments of vases of this latter king, it should be added, were found both by Mr. Haynes and myself above the level of the Ur-Gur platform, some of them containing a second inscription of that Gande mentioned above, whom Prof. Hilprecht identifies with Gandash, founder of the Cossæan dynasty, and who, therefore, ruled about 1450 B. C. It would seem that the stratum of the dynasty of Akkade, containing remains of the three kings, Sargon, Naram-Sin and Alu-Sharshid, lay in general immediately below that of the dynasty of Ur, represented by Ur-Gur as its great builder. The depth of the bottom of the Ur-Gur stratum was nine metres, of that of the Sargon stratum about 11.5 to 12 metres. Mr.

Haynes continued the trench to a point some 16 feet below the bottom of the Ur-Gur platform, or about 54 feet beneath the surface, and sank a shaft to the depth of $68\frac{1}{2}$ feet, at which point he says that he reached virgin soil, although water was reached at a slightly higher level. My excavations were carried down systematically to a point 11.5 metres below the surface, and by a shaft I descended to the depth of 14 metres, or 46 feet. At the depth of 12.95 metres I found a large jar, the same as those found through all periods down into the post-Babylonian. Below the depth of about 40 feet nothing was found by which dates could be fixed. It will be seen from the above figures that, according to the dates ordinarily accepted by Assyriologists, the upper 40 feet of accumulations in this great trench represent a period of not less than 4500 years; how long a period was represented by the $28\frac{1}{2}$ feet below this level we have as yet no way of determining.

Figure 10 gives a view from a sketch by Mr. Meyer of the condition of Mr. Haynes' excavations at the end of the great trench toward the ziggurat, and including the eastern corner of the ziggurat, on Sept. 10th, 1894, after the great southeastern wing or buttress and the late ziggurat wall built over that of Ur-Gur had been removed. I will quote Mr. Haynes' explanation of this drawing:

"A is Ur-Gur's burned brick wall, forming the façade of the lowest stage of the ziggurat.

B shows a small part of the causeway (of Ur-Gur).

C and D are wells sunk to the water-level.

E is the altar (this will be described later; its upper surface was nine feet below the level of the Ur-Gur platform).

F is a curb of peculiar archaic-looking brick, seven courses high. It seems to mark a sacred enclosure, possibly extending around the earlier temple. It has been traced through the tunnels SS to the southwestern side of the great southeastern projection of the cruciform temple of later Babylonian times. Its limits have not been found. (The same wall was found by me under the ziggurat, at its western corner.)

G is a section of the pavement on which the bitumen construction was laid to protect the foundations of Ur-Gur's ziggurat from falling rain. This pavement, from front to back, is ten feet wide.

H.—In a tunnel underneath this pavement at H is shown a section of the very ancient wall recently discovered. This wall has about the same batter as the later wall of Ur-Gur above it. Both

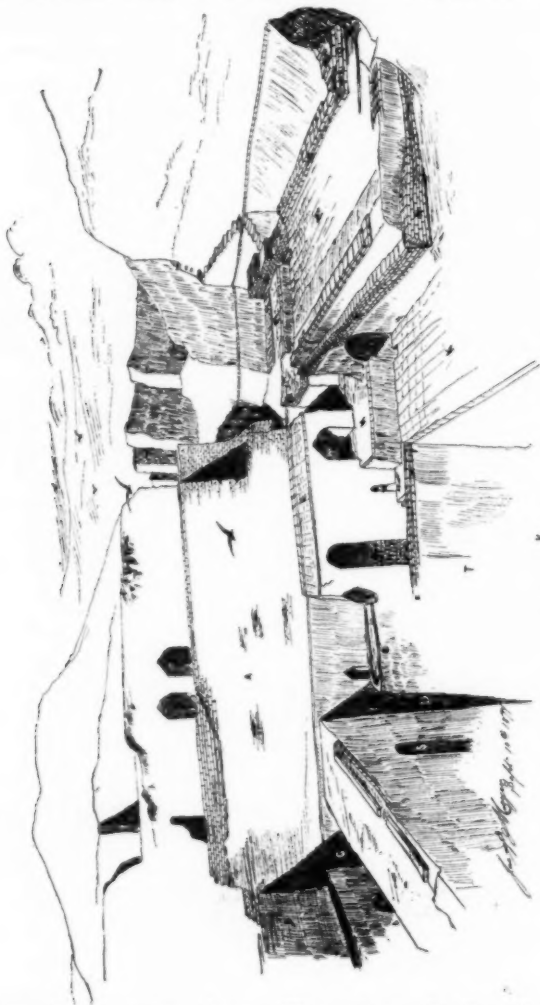


FIG. 10. — GREAT EXCAVATIONS E. OF THE ZIGGURAT.

walls are in the same plane. Hence it can be literally said that Ur-Gur built upon older foundations, although a thick platform lies between the two walls.

K.—The pavement KK lies eight feet below the foundations of Ur-Gur's ziggurat. It extends at least forty feet toward the northeast. Its limits toward the southeast are a matter of conjecture. The bricks in this pavement are about the same size and mould as the bricks of Sargon and Naram-Sin already found. Ur-Gur laid his great platform on the level of this pavement.

M.—The pavement M apparently belongs to the construction whose wall is marked OOO.

N.—N is a very old wall, which evidently antedates Ur-Gur, since it interrupted his platform, and lies wholly within the platform itself.

OP represents a tunnel following the ruined wall OOO toward the northeast, a distance of eighty feet and three inches, to the eastern corner of the building. The foundations of this building and the temple of Bel are on the same level. At least the southwestern end of this building seemed to have been filled solid with crude bricks of the Ur-Gur size, form, color and texture. Could it have been a temple to Beltis, repaired by Ur-Gur?"

Figure 2 represents excavations in the same trench three months earlier, and gives a good view of the causeway of Ur-Gur, which was just visible on the extreme left of Figure 10. The walls of this causeway are each four feet thick, of burned bricks, most of them stamped with the name of Ur-Gur, laid in bitumen. These walls are nine feet apart, and the intervening space is filled with libben or unbaked brick.

Figure 11 gives a more detailed view of the archaic curb marked

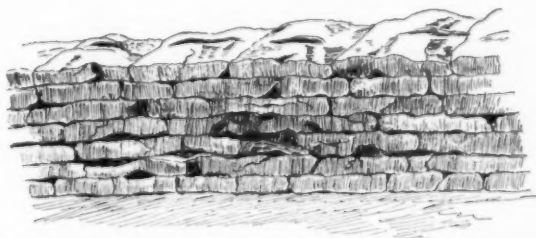


FIG. 11.—ANCIENT CURB FORTY FEET BELOW THE SURFACE.

F on Fig. 10, and Fig. 12 represents one of the plano-convex bricks of this curb. The foundations of this wall Mr. Hayne

reports as being $13\frac{1}{2}$ feet below the bottom of the Ur-Gur wall, which would make it identical in level with the wall of precisely similar construction found by me under the western corner of the

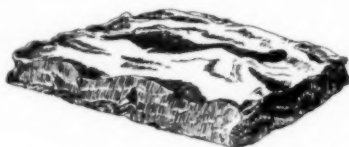


FIG. 12.—RUDE BURNED BRICK FROM THE ABOVE ARCHAIC CURB.

ziggurat, and render still more probable Mr. Haynes' proposition that it enclosed a sacred area. The remains of this wall were 18 inches high, and the bricks were laid in mud in courses alternately lengthwise and crosswise. It seems to be older than the time of Sargon, as it is below his level.

Before the ziggurat, beneath the Ur-Gur level, in the stratum elsewhere assigned to the Sargon dynasty, was found an oven, in which was discovered a new baked clay tablet. This tablet has not yet been deciphered. Like some other tablets found at similar low levels, it is inscribed on one side only. Immediately above the Ur-Gur wall, in the same trench, were found a number of other tablets of most exquisite workmanship, which, like this, have not yet been deciphered. To the northeast of the ziggurat projection, was found a pottery drain in place. The accompanying Figures 13 and 14 give excellent illustrations of different forms

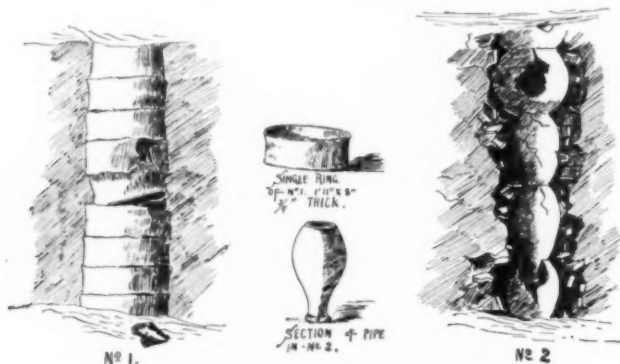


FIG. 13.—TERRACOTTA DRAINS FOUND IN MOUND No. 8.

of these drains, so characteristic of the ruin mounds of Babylonia from the time before Sargon up to the latest period. Sometimes they are composed of rings made for the purpose, sometimes jars are broken at top and bottom and fitted together, as in Fig. 13, No. 2. These drains are often 40 or 50 feet in depth.

I have now given a survey of the strata unearthed in the great trench to the southeast of the ziggurat. More important results were obtained by the careful excavation of the ziggurat itself. It was ascertained that the ziggurat which forms the core of the existing structure was the work of Ur-Gur. Toward the northeastern edge of his solid platform of unbaked brick, eight feet in thickness, Ur-Gur erected a ziggurat in three stages. The lowest of these stages was $20\frac{1}{2}$ feet in height, the sides sloping upward at the rate of one in four. The second terrace set back $13\frac{1}{2}$ feet from the surface of the one below it. The height of this terrace at its slope I am unable to give, as also that of the terrace above. The lower terrace was faced with burned brick on the southeastern side looking toward the great open court. On all of the other sides there was a foundation of baked bricks four courses high and eight wide, above which the material used was unbaked brick covered with a plaster of fine clay mixed with chopped straw, which, being often renewed, preserved the crude bricks beneath as well as if they had been burned by fire. In the middle of each of these three sides was a conduit for the purpose of carrying away water from the upper surface of the ziggurat

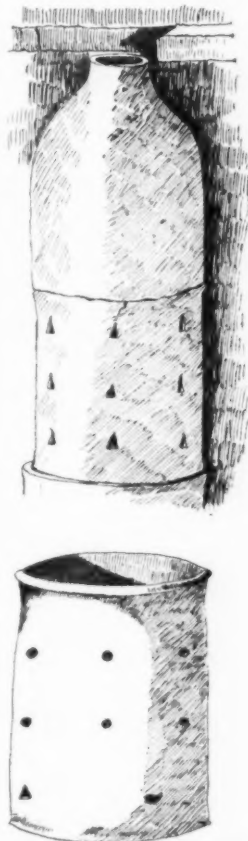


FIG. 14.—TERRACOTTA DRAIN
INLET FROM MOUND VIII,
AND LOWER SECTION OF THE
SAME DRAIN.



FIG. 15.—WATER CONDUIT ON THE S. W. FACE OF THE ZIGGURAT.

(Figures 15 and 16). This conduit was built of baked brick, and had an inner breadth of $3\frac{1}{2}$ feet and a depth of $10\frac{1}{2}$ feet. There was apparently a similar arrangement for carrying off the water

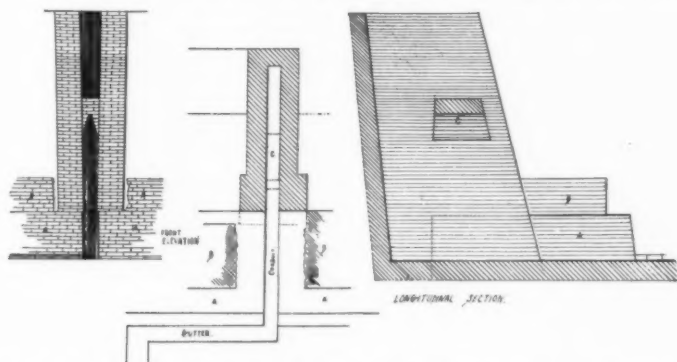


FIG. 16.—WATER CONDUIT ON S. W. SIDE OF THE ZIGGURAT. (Scale, .078 in. = 1 ft.)

in the second and third stages; but it was ruined beyond possibility of restoration. Indeed, both of these stages were so ruined by water that it was difficult to trace or to restore them.

Around the base of the ziggurat, on all sides, was a plaster of bitumen, sloping outward from the ziggurat, with gutters to carry off the water. By this arrangement the apparently very perishable foundation of unburned brick was thoroughly protected from destruction, and unburned brick, protected like this, is, at least in the climate of Babylonia, one of the most imperishable materials of construction that can be found.

The first important change in the form of the ziggurat was made by Kadashman-Turgu, 1257-1241 B. C. He built around the ziggurat of Ur-Gur on three sides, at the base, a casing wall of brick sixteen courses, or $4\frac{1}{2}$ feet, in height, but preserved and utilized the conduits of Ur-Gur. His is the wall exhibited at the base in Figures 15 and 16.

The next great reconstruction was undertaken by Meli-Shiha. Upon the casing wall of Kadashman-Turgu he erected at a slightly different angle, and somewhat set back from the other, a second wall. The conduits on the southwestern, northwestern and northeastern sides he filled up with bricks—many of them



FIG. 17.—N. E. FAÇADE OF THE ZIGGURAT SHOWING THE BUTTRESSED OR PANELED WALL OF MELI-SHIHA AND A FRAGMENT OF THE LATER WALL ABOVE.

stamped with his name—and the upper part of the lower terrace he faced on these three sides with a paneled wall of brick (Fig. 17), giving to the ziggurat quite a different appearance from that which it had hitherto possessed, and enlarging its dimensions, so that when left by him it measured 170 feet by 125 in length and breadth, or very little less than the ziggurat of the temple of Sin at Ur. The reconstructions of Kadashman-Turgu and of Meli-Shiha seem to indicate a filling up of the surface immediately about the ziggurat by the washing down of mud from above. This process continued through the ages until, as we shall see, the greater part of the ziggurat was ultimately buried beneath the accumulations washed down from its own upper surfaces.

Fig. 18, like the rest, from Mr. Meyer's drawings, gives a section

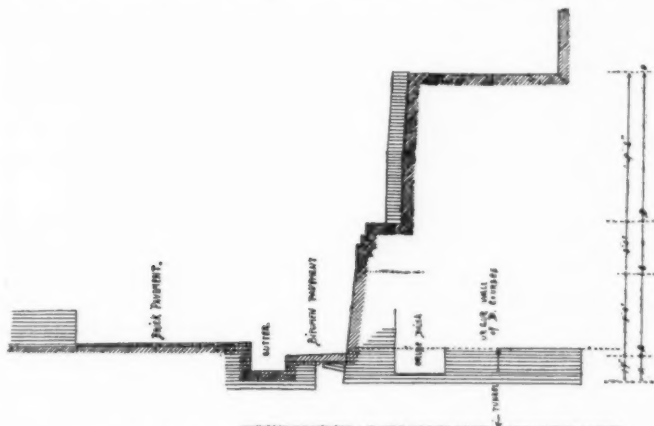


FIG. 18.—SECTION OF N. E. WALL OF ZIGGURAT, THIRTY FEET FROM E. CORNER. (Scale, .100 in. = 1 ft.)

view of the northeastern wall of the ziggurat after Meli-Shiha's restoration. Within is seen the original wall of Ur-Gur, the two lower courses of which continue outward and form the two lower courses of Kadashman-Turgu's wall also. In front of Ur-Gur's wall, on this side, was a filling of crude brick three feet in thickness, and in front of this Kadashman-Turgu's wall of about the same thickness. Kadashman-Turgu's wall is $41\frac{1}{2}$ feet high, rising, with the foundation of Ur-Gur beneath, to the six foot level.

Upon the wall of Kadashman-Turgu, for three feet, stands the foundation of Meli-Shiha's wall, at a different angle, as stated; and above this, but setting back from it, the paneled wall described above rises still nine feet further. The drawing shows the peculiar curvature of the upper wall of Meli-Shiha.

Figure 19 represents the elevation of the northeastern side of the northwestern façade, and shows the later structure erected on Meli-Shiha's wall. A represents the wall of Kadashman-Turgu, B and C that of Meli-Shiha in its two parts. On this

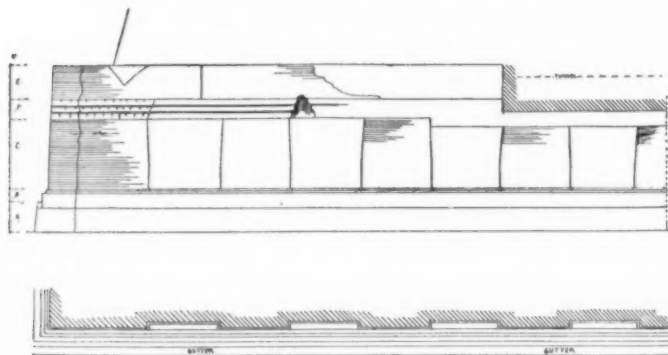


FIG. 19.—ELEVATION AND PLAN OF THE N. W. FAÇADE OF THE ZIGGURAT, AT N. E. END. (Scale, .042 in. = 1 ft.)

was built, at a later date, a wall of unbaked brick (D), of which three courses remain. The crude bricks of this wall are the characteristic bricks of the great reconstruction of the temple which gave the ziggurat its cruciform shape, and which covered the ground about the ziggurat on all sides with the rooms, houses and corridors shown in the plans. These bricks are large, almost square, of rather rough work—in many cases pieces of pottery being used to fasten the clay together in place of straw.

The builder who erected this wall upon that of Meli-Shiha also added the wings or projections on all four sides of the ziggurat, and built over almost the entire ziggurat a new construction of unbaked brick, reducing at the same time the number of stages from three to two (Fig. 20). The rooms about the ziggurat were dovetailed into the new structure. At a later date the brick wall,

marked E on the plan, was built upon the remains of the wall of unbaked brick (D). This wall is of very late date, and composed, not of bricks made for the purpose, but of bricks taken from other constructions, so that the names of a large number of kings are found upon the bricks in this wall. Mr. Haynes suggests that at the time when this wall was built the ground about the ziggurat had been raised by the mud washed down from the surface to the point marked D, so that this wall was really built upon the surface

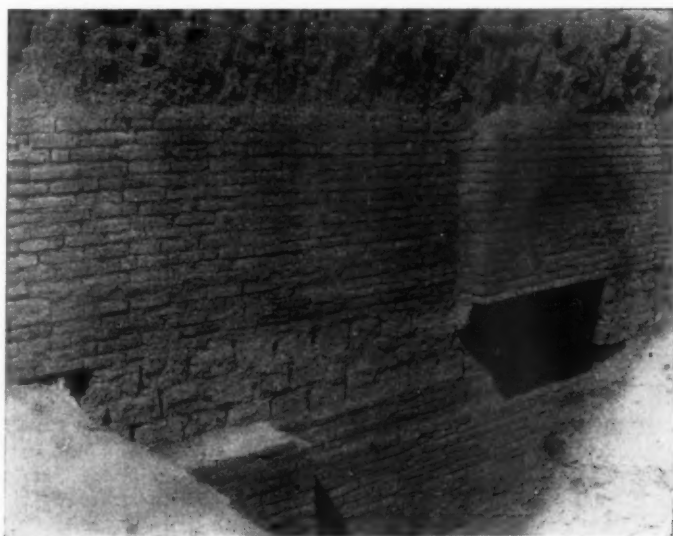


FIG. 20.—WALL OF ZIGGURAT, N. W. SIDE, SHOWING LATEST ADDITIONS.

at that time. This seems quite probable in view of the relation to this wall of the late structures built above the level of the houses on the plateau.

We have thus rapidly surveyed the history of the ziggurat in its reconstructions; but it must be added that other kings did work upon both the ziggurat and the temple, besides those who are responsible for the great reconstructions. An examination of two of the corners of the ziggurat showed that at some time they had been removed almost down to the bottom and afterwards built up again. The bricks of both Ur-Gur and Meli-Shiha were

originally laid in bitumen, but the bricks at the corners of the wall were laid in mud mortar (only those of Meli-Shihah and Ur-Gur having bitumen adhering to them) thus giving evidence that these corners had been removed for some purpose and then built up again. Among the bricks of other kings found in the ziggurat were those of Bur-Sin, Ishme-Dagan and Kurigalzu, and among those found elsewhere in the temple were bricks of Bur-Sin of Isin and Esarhaddon of Assyria, showing that many kings of many ages had honored the temple of Bel at Nippur. Only Nebuchadrezzar II of Babylon, the great builder of temples in other parts of Babylonia, is conspicuous by his absence.

And now, to go back to the ziggurat of Ur-Gur, it will be asked, "What was the object of the ziggurat?" "How was access had to its upper terraces?" and "Where, if at all, were sacrifices offered in connection with it?"

In answer to the first question, I would say that this particular temple of Bel, the Lord, whose proper name was En-Lil (Lord of the Storm), was itself known as E-Kur, or Mountain House. From a comparison of this ziggurat with others, in Assyria and Babylonia, with those described as existing in Southern Arabia, and with Jewish, Phœnician and Syrian temples, as we have them described in the Bible and other ancient sources, from a consideration of the traditions of mountain-worship existing among Semitic peoples, which we find so well illustrated in the Bible by the high places and also by the traditions regarding Sinai, Horeb and the like, and above all from a study of the description which Herodotus gives of the temple of Bel Merodach at Babylon, I have been led to suppose that ziggurats (the word seems to mean peak or high place) were nothing more than conventional mountains, and that the Deity was conceived of as inhabiting a Holy of Holies on the summit of these mountains, where he dwelt unseen, enshrined in darkness. Herodotus describes a chamber containing no image as existing on top of the ziggurat of Bel Merodach at Babylon.

There were found at the top of the ziggurat at Nippur large numbers of bricks which seem to have belonged to some structure, although no walls could be found in place. It will be remembered also that on the summit of the ziggurat of the temple

of Nebo, at Borsippa, there are great masses of brick. In the case of the ziggurat at Nippur, I am inclined to think that these bricks represent a chamber or shrine which once stood upon the summit of the ziggurat, like that described by Herodotus as existing on the top of the temple of Bel Merodach at Babylon.

In answer to the second question—"How were the upper stages of the ziggurat reached?"—we found, as stated, a causeway running from a point at about the outer great wall of the temple, southeast of the ziggurat, up to the ziggurat. It was impossible to determine whether the ascent on this causeway was by steps or by an inclined plane, although I suppose the latter to be the more probable. Access was had from the lower terrace to the upper terraces apparently by a continuation of this same causeway.

In answer to the question, "Where, if at all, were sacrifices offered in connection with the ziggurat?" I would say that beneath the platform of Ur-Gur, in front of the southeastern side of the ziggurat, between the causeway and the eastern corner, stood (as shown on Fig. 10) an altar. This altar was of unbaked brick some 13 feet in length. On this was a ring of bitumen seven inches in height, the surface within which was wholly covered with ashes; some of them bone ashes. To the southwest of this altar was a sort of bin or receptacle of crude brick, full of ashes to the depth of about a foot. This altar was apparently in use at the period of Sargon, although its foundations may have been more ancient. No altar was found at any other level, but I am inclined to reason from this altar to the position of the altar at all times, and suppose that sacrifices were offered at the foot of the ziggurat, on its southeastern side—just as in the temple of Yahweh at Jerusalem sacrifices were offered upon an altar which stood outside of and beneath the elevated or holy place on its eastern side. The Holy Place and the Holy of Holies in the temple at Jerusalem seem to me to correspond to the ziggurat and the chambers upon it in the temple of Bel at Nippur, in the sense that the temple at Jerusalem was a development from a ziggurat temple, like that of Bel at Nippur.

The notice of this altar which stood below the platform of Ur-Gur leads me, finally, to note the constructions found beneath the

Ur-Gur level. In front of this altar, at a distance of six feet from it, as already noted, ran a wall of most archaic construction, which also appeared under the western corner of the ziggurat, and which may at some time have been the boundary of an inner Holy Place—the court of the priests. In exploring at Mughair I thought that I found traces of a similar wall around the ziggurat of the temple of Sin at that place.

Beneath the platform of Ur-Gur, under the eastern corner of the ziggurat, was found a construction which, from the bricks composing it and about it, Mr. Haynes thinks to have dated from the time of Naram Sin, or his father Sargon. The walls, of admirable construction, were standing to the height of 11 feet, and the platform of Ur-Gur's ziggurat rested immediately upon these walls. The building of which these walls formed a part proved on examination to be a solid tower 23 feet square, but no ziggurat—unless, indeed, this were the lower stage of a ziggurat of very small dimensions. No traces were found of any ziggurat earlier than the time of Ur-Gur, unless the tower above referred to was, as suggested, a ziggurat of very small dimensions. Mr. Haynes raises the question whether Ur-Gur was the first builder of ziggurats in Babylonia, and calls attention to the fact that the earliest ziggurats known, those of Nippur, Erech and Ur, are all his workmanship. That there was from a much earlier time a temple at Nippur on the same site as in the days of Ur-Gur, and with the same name, is shown by the inscriptions of Sargon and Alu-Sharshid. The only question is as to the form of that temple.

Beneath the tower mentioned above Mr. Haynes found an arched drain, the arch of which he describes as "Roman," but no full description and no drawings or photographs of it have yet come to hand. He also found bricks laid in lime mortar. He also found at the same depth a great quantity of clay water-cocks (Fig. 21), which, as he points out, are identical with those manufactured and used as drinking-fountains in many parts of Turkey to-day. To get a drink one closes with the hand the small lower orifice, whereupon the water fills the cock, and one drinks with the mouth directly from the large upper orifice.

There were also found at this same level, and near to the square tower, some fragments of unbaked tablets, together with

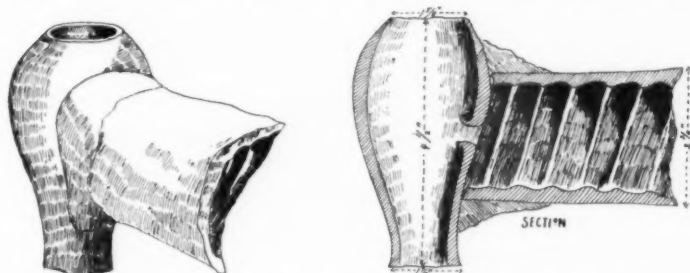


FIG. 21.—WATER VENT FORTY-FIVE FEET BELOW THE SURFACE S. E. OF THE ZIGGURAT.

pieces of clay prepared or being prepared to receive inscriptions, thus proving that as early as the time of Sargon (3800 B. C.), clay tablets were used for purposes of writing. (It may be said that the earliest dated tablet yet found anywhere, which was found at Nippur, is a tablet of Dungi, the son of Ur-Gur.) Fifteen feet lower than the level of the drain, the water-cocks, and so forth, but in the great trench (1 on the plan), and not under the ziggurat, Mr. Haynes also discovered a mortar of burned clay, a stone vase perforated with several holes, and a gutter of burned clay, meant to serve as a gargoyle to conduct water from the roof. The fragments of pottery and the bricks found at this and even lower levels were practically identical with those found at much higher levels, showing a homogeneity of civilization and culture throughout. In other words, from the stratum of the late Babylonian constructions down to a stratum twenty feet and more below the stratum of Sargon, we have everywhere the remains of a high and practically homogeneous civilization. Now, in view of the mass of accumulations beneath the Sargon level, if, with practically all Assyriologists, we accept for Sargon the date 3800 B. C., we must suppose the earliest constructions on the site of the temple of Bel at Nippur to have been erected as early as 6000 B. C., and perhaps even earlier, and that civilization in Babylonia had been carried to this high state at that very early date. (On geological grounds I have argued that the foundation of Ur and Eridu was between

6000 and 7000 B. C.) There is, according to the measurements given above, 20 feet of débris to be accounted for before the time of Sargon, and we can hardly assign for this a shorter period than 2000 years.

After Sargon's time the dating of the strata and the rate of accumulation seem to be satisfactory until we reach the stratum of Meli-Shiha. If he were Meli-Shikhu (1171-1157 B. C.), as at first supposed by Prof. Hilprecht, the general proportions of accumulation would be approximately correct; but if he be Ashurbanipal of Assyria (669-626 B. C.), as Prof. Hilprecht seems now to have proved him to be, then the accumulations between him and his immediate predecessors seem to have been abnormally slow, and those after his date as abnormally rapid. Whoever he was, he was one of the greatest of the builders of Nippur and the most artistic. He used burned bricks and glazed bricks freely, and some of the brick constructions embedded in the later masses of unburned brick presumably date from him. After his time came a great catastrophe. Everything except the ziggurat was razed and rebuilt, and even that was totally changed in appearance and built over, if not rebuilt. Who it was who thus rebuilt the temple we do not know, although on general grounds I have assigned this work to the neo-Babylonian period. It certainly cannot be later than that; and if Meli-Shiha were not Ashurbanipal, I might even have supposed it to be earlier. Whoever did the work was certainly a great builder, and the walls, terraces and the like of this reconstruction are really of astounding size and fine construction. Nebuchadrezzar is the only later monarch of whom I can think who would have been likely to have undertaken a work of such dimensions; but as he used burned bricks stamped with his own name more freely than any monarch of whom we know, the absence of such bricks from this construction seems to be proof positive that he was not the builder.

JOHN P. PETERS.

St. Michael's Church, New York,
March 6, 1895.

NECROLOGY.

BRUGSCH-PASHA. †

Henry Brugsch was born on the 12th of February, 1827, in Berlin. His father, a subaltern officer of the uhlans, who educated him in military discipline, sent him to the "Latin-school." At the age of twelve the boy was attracted by the Egyptian monuments of the royal collection (very insignificant at that time), and at the age of sixteen he published his first treatise on Egyptology, written in Latin (*De natura et indole lingue popularis*, etc.) This essay excited general interest because scholars had left the study of the demotic script of the ancient Egyptians almost untouched since Young and Champollion had made a few steps in its decipherment. Now a young student at the "gymnasium" had the courage to take it up. Alexander von Humboldt participated in the general interest, and that essay was printed at his expense. Humboldt continued to be the gracious patron of the talented but poor young scholar, and after Brugsch had left the university with the degree of doctor, he procured for him travelling scholarships which enabled him to visit all the museums of Egyptian antiquities, and, finally, Egypt itself, in 1853.

There Brugsch met Mariette, who had just opened the tombs of the apis-bulls. This period was mainly devoted to the same studies with which he had begun, and in 1855 he published, as a crowning work, his *Grammaire Démotique*. This book has been more admired than studied, because up to date demotic studies have, for good reasons, never been very popular. Brugsch seems to have felt this, for he began to turn his attention more and more to the hieroglyphic monuments. At that time, in Germany, certain men, such as Spohn, Seyffarth (who died in America some years ago) and Uhleman, had questioned the correctness of Champollion's system of deciphering, and, not giving a new system themselves, but disfiguring Champollion's results, they decried all his adherents and followers so successfully that, before 1860, Lepsius, almost the only German Champollionist, was at great disadvantage. Brugsch has done much to remove these perverting influences, beginning with his treatises (Latin and German, 1851), on the Rosetta stone. His second Egyptian

journey, in 1859, enabled him to do more in hieroglyphics. The *Monuments de l'Égypte* were the first fruit, but this work remained a fragment, like his *Histoire de l'Égypte*. Far more important were the *Géographie et Inscriptions* (1856-60), in which he took up quite a new kind of philological research.

In 1863 he had the extremely happy idea of founding a journal which should be devoted entirely to the promotion of Egyptological studies (the *Zeitschrift für ägyptische Sprache und Alterthumskunde*). The rapid progress of Egyptology is due especially to the existence of this organ, which, up to the present, has remained the centre especially of grammatical researches. It is characteristic that Brugsch, its bold founder, had to leave it in the hands of his rival, Lepsius, who, owing to his unusual resources, managed it successfully until 1884. After Lepsius' death it returned into the hands of Brugsch, who had given it up when he went to Cairo as Prussian consul. He remained only two years in this position. Of his different works from that time forward I will mention only his *Matériaux p. servir à la reconstruction du calendrier des anc. Égyptiens*, opening again a new field of research.

It was in 1867 that he had his greatest success, the professorship of Goettingen. This enabled him to begin his *magnum opus*, the *Hieroglyphic-Demotic Dictionary* (1868-82) in seven large volumes, all autographed by himself. But quiet Goettingen was not the place for him, and soon he took leave for five years to return to Egypt. The great boom of Ismail Pasha led to the establishment of an Egyptological school for young Egyptians, but this met the fate of most foundations of Ismail. Brugsch, who wrote for it one of his least scientific but most useful books, the *Hieroglyphic Grammar* (1870, French and German,) suffered financial and scientific disappointment. He mentioned to me some very elementary subjects in which he had to give instruction, instead of hieroglyphics. But he found time to write several works, among which his *Dictionnaire Géographique* (1879-89) holds the most important place. In 1876 he represented Egypt at the Centennial Exposition of Philadelphia, having done so before at Vienna. What he hoped for was the place of his best personal friend, A. Mariette, the director of the Egyptian excavations. But when Mariette died, in 1881, the promises given to Brugsch were not kept, and this desirable position was given to Maspero, as a countryman of Mariette. Maspero on leaving it secured this position for his students. Poor Brugsch returned to Germany. In 1884 he entertained the hope, after the death of Lepsius, of succeeding to his positions. But to the government Brugsch was not a *persona grata*, and he was disappointed in a most cruel manner. Twenty years

before (in 1860) he had done a great service to his government by taking the leadership of an embassy to Persia when it was threatened with shipwreck, and had led it most successfully. Now he was charged with a similar mission to Persia. When he returned he found both positions of Lepsius, the professorship and the directorship of the Berlin Museum, occupied. He retired to Charlottenburg, near Berlin, in possession of several fine titles (Pasha, Legationsrath, Professor), but in an unsatisfactory condition, especially financially, owing to his large family. I can testify that he felt very strongly the constraint which forced him to lecture and to write for the sake of money. He deserves our pardon for having written during this period some Egyptological books which betray that they are not written in a purely scientific interest (e. g., his *Sieben Jahre der Hungersnoth*). For many years he had been a most unselfish writer, guided only by love of his science. His immense work, the *Thesaurus Inscriptionum* (1884-91), his work on the religion and mythology of the ancient Egyptians (1888), in which he again opened up a new field, his *Egyptology* (1889), very much dependent on Erman's *Aegypten*, are the better works of that last period. To give some relief to him the government sent him repeatedly to Egypt to study, to excavate and buy for the museum.

To give an impartial judgment of his scientific life, and to differ somewhat from the usual panegyrical style of necrologists, it must be confessed that he was undoubtedly lacking in strict philological method. I believe his earliest period must be made responsible for this. He began as a youthful prodigy, and from the journals of the period one can see how much the young doctor was admired and spoiled. This led him to neglect the philological drill in other disciplines which would have enabled him to systematize a young science. He confessed to me in 1885: "I never had any interest in philological hair-splitting; the only thing that gave me pleasure was reading and deciphering." This weakness is most painful in his Demotic Grammar, even more than in the Hieroglyphic Grammar and in his many philological essays. That lack of philological training explains also why such a gifted draughtsman, whose handwriting, both modern and hieroglyphic, was a marvel of beauty, published in his earlier period such wretched copies of inscriptions. Especially in his demotic facsimiles (and even in his *Thesaurus* of 1890) he would "correct" any word or sign unintelligible to him. Above all, I think he was weak as a historian, as is shown in his *History of Egypt* (1875, also in English). He never touched upon art and archaeology. But his geniality and productivity were so enormous that he has furthered his science far more than any other scholar since Champollion. I

have enumerated only a fraction of his books, and none of his many essays. Everywhere he has worked as a pioneer, everywhere science owes so many thanks to him that his merits outweigh his blunders, however many and serious they are. His dictionary is a book which ought not to be put into the hand of a non-Egyptologist, but the specialist finds in its immense collections of material an invaluable treasure. It is easy to discover a goodly percentage of blunders on each page, to smile at his poor use of Coptic, at the unscientific comparisons with other languages (even the Aryan), but if Brugsch had not had such courage and stupendous energy in 1868 should we have such a dictionary at all, even now in 1894? The same can be said of many other works, although each one ought to be marked "to be used with caution." Some writings deserve much praise for their popularizing power. The most entertaining of them is his late autobiography. Brugsch might have been extremely useful as an academic teacher. Anyone who has felt the magic power of his personality will admit that no better man could be found to attract and to interest students and to fill them with that glowing love of his science which made him work up to the last moment. This unselfish zeal manifested itself in the sacrifices of time and work for every young student to whom he could be useful, even during the last years of complete hopelessness and of cares. As I have been among these, and owe him several debts of gratitude, I refrain from the unpleasant discussion why a man with such wonderful gifts, also in social respects, had such a sad life, full of failures. Some people ascribe it to his having assumed some Oriental ways of thinking and living. It was rather a strange unrest which also caused this most amiable, gentlemanlike person (the chaperon of a dozen princes because of these uncommon qualities) to begin several unprovoked literary quarrels with scholars of merit (*e. g.* with Chabas). Possibly future ages will blame Brugsch's contemporaries for not having overlooked these personal blemishes. So much is certain, for love of science and industry his name will always remain a shining example.

PHILADELPHIA.

W. MAX MÜLLER.

CORRESPONDENCE.

NOTE TO "A TORSO FROM DAPHNE."

To the Editor of the Journal of Archæology:

DEAR SIR.—I find that the torso published by me in the AMERICAN JOURNAL OF ARCHÆOLOGY (vol. ix, pp. 53 ff.), had not been catalogued in the *Deltion*, but had been noticed by Milchhöfer in his *Antikenbericht aus Attika* in the *Mittheilungen*, XIII (1888), p. 345, as lying in Chaidari, as far back as 1887. It is singular enough that in the summer of 1892 it was brought into the Central Museum and reported as one of several things excavated during the summer.

RUFUS B. RICHARDSON.

Athens, Feb. 11, 1895.

REVIEWS AND NOTICES OF BOOKS.

W. FRÖHNER. *La Collection Tyszkiewicz. Choix de Monuments Antiques avec texte explicatif.* 4to. Verlagsanstalt f. Kunst und Wissenschaft. Munich.

The famous collection of Count Tyszkiewicz, in Rome, is being published in excellent style, the text by Fröhner, the plates by the Verlagsanstalt für Kunst und Wissenschaft in Munich. Three of the *livraisons* have already reached us.

The collection represents a catholic taste in ancient art. Egyptian, Phœnician, Etruscan, Greek, Roman and Byzantine objects are represented. Marble and bronze sculpture, vases, jewelry, engraved gems and inscriptions find a place here. Many of these are of extremely fine quality, and it is a satisfaction to have them published with such excellent plates. Of the vases especially noteworthy is a very delicate *kylix* with brown figures outlined upon a white ground, representing the Flight of Nephele. The extreme rarity of this class of vases and the unique subject give this an unusual value. Unfortunately the artist's signature is incomplete. The Greek bronzes extend over a wide period. A bust of Aphrodite is attributed by Fröhner to the age of Homer, though we are inclined to put it not earlier than the VII century. An archaic Jupiter also represents the VII century; a head of Apollon the VI; a fine statuette of Venus and another of Apollon the IV; a Bacchus in repose, the Hellenistic period; an excellent head of Mars, the time of Augustus. A fine mirror-cover of bronze, representing Eros upon a dolphin, is an extremely effective work of the IV century, and valuable for comparison with terracottas of the same period.

Fröhner's text is helpful and in general accurate. We should not, however, describe as Hittite the Mycenaean gem upon Plate I, and to our eye the finely engraved and striking gem, No. 12 on Plate XXIV, in which Fröhner sees a portrait of an ancient Mesopotamian king, has a strikingly modern appearance.

A. M.

H. STUART JONES. *Select Passages from Ancient Writers illustrative of the History of Greek Sculpture.* 8vo, pp. xl-231. Price, \$2.25. Macmillan & Co., 66 Fifth avenue, New York. 1895.

This volume is especially designed to aid students of the Classical School at Oxford, who are required to present for examination the subject of Greek sculpture; but it has a wider function in presenting in accessible form to English readers passages from ancient writers illustrative of the history of Greek sculpture. It does not aim to supply the place of Overbeck's *Antiken Schriftquellen* as a work of reference, since only two hundred and seventy-one passages are given, instead of the twenty-four hundred quoted by Overbeck. The principle of selection has been to present such passages as contain information of a descriptive character. These references and descriptions afford, therefore, a running commentary from ancient sources upon the history of Greek sculpture. They have been judiciously selected and well arranged, as the table of contents will show. Some passages not given by Overbeck are also published.

That such a volume will aid the student at Oxford to prepare for his examinations is evident, for together with the passages from the ancient authors is given a translation and brief but excellent notes. The translation into English of these passages is, we trust, a work of supererogation, if the work be designed chiefly for the benefit of the Oxford classical student. But to the general public it will certainly be a convenience to have in English this selection of classic references to Greek sculpture.

A. M.

SCHREIBER. *Atlas of Classical Antiquities.* Edited for English use by Prof. W. C. F. ANDERSON, Firth College, Sheffield, with a Preface by Prof. Percy Gardner. Price, \$6.50. Macmillan & Co., 66 Fifth Ave., New York.

We are glad to see the growing tendency amongst English classical scholars, when translating foreign books, to make of them improved editions more serviceable to the student. Such is eminently the case with the present English edition of Schreiber's *Kulturhistorischer Bilder-atlas*. That volume consists of one hundred engraved plates, each containing a number of illustrations. These are arranged topically and comprehend such subjects as the drama, music, technical methods of sculpture and painting and architecture, religion, athletics, war, ships, cities, arts and crafts, etc. In a few pages of introductory matter Schreiber had four brief bibliographical references and gathered together in a very condensed form a classified table of contents. The

English edition should be more useful to the student, not only because it contains an enlarged text, but because the bibliographical references are far more abundant and practical. Prof. Anderson has treated this series of illustrations as if it were a museum collection, each object of which is figured and described. This essentially changes the point of view of the book. Schreiber refers to general treatises to which his plates will serve as illustration; Anderson presents the plates as the starting point and the text as illustrative material. Thus the English edition may be regarded as a convert from the philological and literary to the archaeological point of view. A. M.

DEHLI and CHAMBERLIN. *Norman Monuments of Palermo and Environs*. A study by Arne Dehli, architect, author of "St. Mark's and Venice" and "Ravenna," assisted by G. Howard Chamberlin, architect. Folio, pp. xviii-30: with 12 heliotype, 10 photo-grain, and 50 outline plates. Boston, Ticknor & Co., 1894.

This book is welcome both in itself and as an encouraging sign that our American architects are in some cases becoming aware of the importance in modern practice of consulting and understanding the past. It will not appeal in the least either to the majority who simply pillage the past without caring how they mix and combine discordant styles in their adaptations, or the other school that is settling down into the narrow groove of classicism, and outside of it sees no good thing. Mr. Dehli has the excellent taste to admire the wonderful interiors of the Sicilian churches built by the Norman kings, and even goes so far as to believe them unsurpassed in their rich and harmonious unity. There are other books describing more in detail the architecture of these churches, and there are sumptuous publications reproducing their incomparable series of figured mosaics so important for Christian art and iconography, but nowhere do we find such plates as in this book, giving numerous details of the mosaic pavements and wall dados and friezes, the designs of columns, choir screens, etc. Such details are of great value for the designer and decorator as well as for the historian. A similar service has been rendered for the Byzantine work at Ravenna and at St. Mark's in Venice by Mr. Dehli himself in his series of plates recently issued in Germany—though the title is the only German thing about them: *Architektonische und Ornamentale Details in Byzantinischen Style in Italien*.

While these outline plates are of especial interest to the practical student, the other plates are of greater help to the æsthetic student. But these are very unequal in character. The heliotypes are good,

and give a better idea of the beauties of Monreale—especially the interiors in the choir and transepts—than any plates yet published; but the so-called “photo-grains” are simply atrocious and murder their subjects.

The text has both good and bad points. One cannot expect an architect to have the time to make himself the historian of the period the art of which he is illustrating, so that it would be wrong to be hypercritical. Mr. Dehli, in his introduction, makes a profession of faith in regard to his attitude toward the historic study of architecture. He takes an independent view of the development of Mediaeval Architecture and kicks over received nomenclatures. He especially protests against the two categories of “Early Christian,” which he also calls classic Romanesque (why?) and “Byzantine.” His reason is that he finds Byzantine detail as prevalent throughout Italy (and even Rome) as in the Orient. He does not think that it would be so universal were it not a child of Italian soil. He would have no difficulty, however, in accepting its Byzantine origin were he aware of the complete supremacy of Byzantium in Italy during those centuries—a fact not generally realized.

Mr. Dehli has a short chapter on the history of Sicily, which is full of errors, some of which affect his understanding of the development of art. Belisarius conquered the island for Byzantium under Justinian, not under Julian. The Arabs took Palermo in 835, not 831, and for some time after possessed but a small part of the country about this city, not capturing Syracuse until 877. One cannot understand such a statement as this, that “the Byzantine period, like the succeeding Arab, has left no architectural monuments in Sicily, and, I think, no reliable record of any.” There are plenty of records, if Mr. Dehli had taken the trouble to read them. Nor is there such obscurity regarding the fate of the Byzantine population as he imagines. There are plenty of proofs that it was concentrated especially in the Val di Demena, the Val di Noto and at Messina, where there were no Mussulmans, and also that a heavy emigration took place to the mainland, especially to Calabria, which was thus helped to become entirely Greek. We know also that they enjoyed freedom of worship.

When the Normans conquered Sicily the population was Arab or Byzantine, with a slight admixture of Lombards and Jews. Mr. Dehli does not appear to recognize sufficiently the intervention of the Arabs in the erection of the buildings of the Normans. The pointed arches universally employed, the stalactite decoration, the Eastern decorative painting of the church ceilings, the Egyptian designs in the decorative mosaics, all go to show that the native Arab artists and others imported from Egypt were largely responsible for the erection and

decoration of the Norman churches and palaces. This was but natural in view of the magnificent artistic development that had been going on among the Mohammedans, both in Sicily and in Egypt, for over a century. When Palermo was taken in 1072 by the Normans, it is said that Duke Robert, having gone up to the top of the citadel, gazed at the immense palaces of the Saracens, among which the Church of the Virgin was hardly visible with its oven-shaped dome. This church, the former Byzantine cathedral, had been turned into a mosque, but now the archbishop, who had been transferred by the Mohammedans to the small church of St. Cyriacus, was brought back to the cathedral. It is probable that such buildings as this Byzantine cathedral served as models for the domes of the Norman churches, which are precisely of this oven-shaped form. In almost all the Sicilian churches of basilical form, the transept and apse are built on Byzantine model, and the nave and aisles combine the Mohammedan and basilical forms.

The Norman conquest was not as casual a matter as Mr. Dehli states—by taking a hand in a quarrel between two Arab sheiks (he means *emirs*). Nor was it unsuccessful until a final expedition in 1090, for the Normans never left the island after 1061, and substantially subdued it as early as 1072, when they captured Palermo. When Mr. Dehli states that we know very little of the Norman period outside of dates and official history—often unreliable at that—it seems as if he were giving a wrong impression. The material may not be very accessible, but it exists, and most plentifully, as would be patent to every one had Mr. Freeman been able to finish his history of Sicily under the Normans.

A. L. FROTHINGHAM, JR.

Le Gallerie Nazionali Italiane. Notizie. Documenti. Anno 1. Per cura del Ministero della Pubblica Istruzione. In-4o. Roma, 1894. pp. VI-224.

The Ministry of Public Instruction has begun the publication of the magnificent annual entitled "Le Gallerie Nazionali Italiane." The first year was published at the close of 1894, under the general editorship of Professor Adolfo Venturi. The object of this publication is to announce the most recent acquisitions of the various galleries and museums of Italy, to note the reorganization of the collections, the reattribution of special works and to publish a catalogue of those collections which come under the law of the Fidecommissio, about which there have been so much litigation. This last work involves very careful research, in order to discriminate between the works in private hands which are the private property of the owners and those which belong

to the public domain. This is especially important in the case of the Roman galleries, as was shown in connection with the collection of Prince Sciarra. Finally, this publication will contribute new documents for the history of art.

This first volume contains the following articles: (1) The Brera gallery in Milan with an account of two recently acquired paintings by Francesco del Cossa, both of which are reproduced in fine phototype plates; they represent single figures of John the Baptist and St. Peter and belong to the Ferrarese period of the master. The third acquisition is that of the Virgin and Child with saints by Galeazzo Campi of Cremona, dated 1517. A report is also made upon the paintings belonging to the gallery, which at various times had been loaned by it to different churches throughout Lombardy, which stood in need of decoration. Among a good deal of rubbish there are quite a number of important paintings, among which is one by Iacopo Bellini, dated 1453, and others by Vivarini, Cima, Palmezzano, Timoteo Vite, Francia, Garofalo, etc. (2) The second article, on the gallery of Parma, is devoted almost entirely to an historical account, by its present director Corrado Ricci, of the history and acquisitions of this gallery, of the different attempts at arranging it and of the new arrangement by which for the first time the gallery has received a rational order. The director gives quite a full study of the various painters of the school of Parma, reaching out far beyond the limits of the gallery itself and noting where it is especially deficient. The restorations and improvements made throughout the city are also noted and a number of fine phototype plates illustrate the paper; namely: A Virgin and Child with Saints by Caselli, the Madonna della Scodella by Correggio, the St. Catherine among the doctors by Araldi and the Immaculate Conception by Mazzola. (3) The next article is on the gallery and collection of coins in Modena. This gallery also has been rearranged under the direction of Professor Venturi, with the assistance of the director of the gallery, Cantalamessa. The first hall contains only works of the school of Ferrara, the artistic leader of the province. The second hall is devoted to the schools derived from it or cognate to it, including Modena, Parma, Bologna, etc. The third hall contains all other schools of the fifteenth and sixteenth centuries. Two plates are given illustrating the Virgin and Child by Correggio and Christ bearing the cross by Solario, recent gifts of Marquis Campori. A number of other paintings have been added to the gallery; the most important being, one by Agnolo degli Erri, who belonged to a family of painters of Modena in the fifteenth century. In order to collect in the same locality all the objects of antiquity and of art that illustrate the artistic activity of the province, the ministry of public instruction decreed the

junction with the gallery of the collection of medals, coins, ivories, bronzes, cameos and other antiquities, which had hitherto lain in the museum of the city library. Five phototype plates illustrate this part of the collection; two of them bronze vases with elaborate decoration in relief by the famous Renaissance sculptor Andrea Briosco called *Il Riccio*. The third plate reproduces an important Italo-Byzantine ivory carving of the close of the twelfth century. The two final plates give inedited Renaissance medals, of which a careful description is to be found in the text. The small collection of antiquities had until recently been entirely hidden from the public and packed in cases. It has now been placed on exhibition and a synopsis of its contents is given in this paper. (4) The next paper is on the Archaeological Museum of Venice. It commences by a description of inedited medals and it is illustrated by a plate of a work in high relief by Andrea Riccio and a bust of the fifteenth century—perhaps that of Doge Leonardo Lore-dano—both in bronze. An article on the Florence galleries is merely a catalogue of the additions that have been made to them, either by gift or purchase, commencing with the gifts of Dr. Arthur de Noe Walker. A plate is given of the most important of these, a figure of *Venus* by Lorenzo de Credi. Of a different character is the report on Roman galleries that come under the *Fidecommissio* law. The ministry of public instruction confided the task of drawing up a catalogue of the paintings in these different collections to Cav. Giulio Cantalamessa. He announced in this brief report that he has presented to the ministry the volumes of these descriptive catalogues of the galleries, together with detailed reports upon each one of them, and the present paper is a summary report giving a synopsis of the work done, of the methods employed, of the difficulties met with and all the circumstances connected with a task of such delicacy and difficulty. Especial reference is made to the *Borghese*, the *Sciarra*, the *Doria-Pamphili*, the *Spada*, the *Baberini*, the *Colonna* and the *Rospigliosi* collections. The second part of the paper is devoted to a short report upon the ancient sculptures in the possession of Roman collectors, coming under the same law. It was made by Dr. Mariani and in its descriptive portions was made comparatively easy by full catalogues of ancient sculpture in Rome, which have been already published. The only difficulty met with was in carefully distinguishing between the objects that were private property and those that were the property of the nation. The final article is upon *Civic Italian Museums*. This consists merely of a report from the inspector of Pisan monuments (*Supino*) upon the Civic Museum recently established by citizen vote in Pisa, with the object of securing a better exhibition of many works of art existing in the city. The collection has been located in the monastery of *St. Francis*.

It is especially important for Mediaeval art, and contains many illuminated manuscripts, enamels, pieces of gold and silver work, Byzantine and Gothic embroideries, ivory carvings, especially a coffer of Italic-Byzantine style of the x century. The second hall contains a chronological exhibit of paintings beginning with the Byzantine, Pisan and Lucchese schools, including those by Giunta and the Berlinghieri, examples of the Sienese and Florentine schools with Simone di Martino and the followers of Giotto. One of the remote successors of Giunta represented by a dated painting is Giovanni di Nicola. Among the works of the Sienese school, is one dated 1356 by Luca Tome. One of the most important of the paintings is a signed work by Barnaba of Modena, representing the Virgin and Child. The Florentine school of the xiv and xv centuries is very well represented. The fragments of the pulpit which was executed by Giovanni Pisano for the Cathedral, are being put together in the museum.

The volume closes with a specimen of the original documents, the publication of which will be one of the features of this new Annual. The document in this case is a book of accounts (*Libro dei Conti*) of the Venetian painter Lorenzo Lotto, whose life and work have been brought prominently before the public of late, especially by the writings of one of our American critics, Bernhard Berenson. In a brief introduction to the document itself, Professor Venturi calls attention to the interesting facts in regard to the life and work of the artist that are brought out in the text. It gives us quite an intimate glimpse of his character, of his friends and of his family, and allows us to keep him company in his many journeys, in his many contracts, and to follow the vicissitudes of his financial condition. His diary is a proof of his extraordinary activity and of the abundance of the works with which he decorated five provinces of Italy: Venice, Treviso, Bergamo, Ancona and Macerata. The catalogue of these works, drawn up from his register, extends from the year 1538 to the year 1554.

A. L. FROTHINGHAM, Jr.

WILHELM BODE. *Denkmäler der Renaissance Sculptur Toscanas.*
Verlagsanstalt für Kunst und Wissenschaft. München.

We take pleasure in recommending to the attention of our readers this important publication. The enterprising publishers, who have already won the gratitude of the art-loving world by their magnificent publications, here accomplish for Tuscan Renaissance sculpture of the xv and xvi centuries the same service which they have done for Greek and Roman sculpture in the publication of Brunn's *Denkmäler*. The work is now coming out in parts, containing phototype

plates in folio and text in quarto. The plates are generally excellent, being made from clear negatives and well printed; and the text by Dr. Bode is comprehensive, condensed and well adapted to its purpose. This work, in spite of its expensive character, should find its way into all important libraries where the history of art is cultivated, for it is only from such comprehensive corpuses of photographic reproductions that the history of sculpture can be conveniently studied.

Whether publications of this character are thoroughly adapted to the financial capabilities of the art-loving public, the publishers doubtless know by the measure of success with which their enterprises have been greeted. We should imagine, however, that the general public is now sufficiently educated and interested in the history of art to demand even more comprehensive corpuses of smaller illustrations at less cost.

A. M.

Il Codice Atlantico di Leonardo da Vinci, nella Biblioteca Ambrosiana di Milano. Riprodotto e Pubblicato dalla Regia Accademia dei Lincei sotto gli auspici e col sussidio DEL RE E DEL GOVERNO. Milano, ULRICO HOEPLI, Editore Libraj della Real Casa e della R. Accademia dei Lincei.

The success which has attended the various publications of Leonardo di Vinci's drawings has led the Italian Ministry of Public Instruction to undertake the publication of the entire series of 1750 drawings contained in the 800 large sheets forming his famous *Codex Atlanticus*. The history of this volume is quite dramatic. On the dispersal of the collection of the drawings of Leonardo, the bulk of them was acquired by Pompeo Leoni, who, towards 1587, dismembered the collection in order to compose this volume, which from its size received the name of *Atlanticus*. In doing so he paid no attention to the original order, but followed a purely arbitrary arrangement. By the gift of Count Arconati the volume passed in 1637 into the Ambrosian Library, from which it was absent only in a temporary and forced residence in France between 1796 and 1815. It has formed the basis of many studies and yet has not been in the least exhausted as a mine of study. As early as 1872 a fragment or "Saggio" of its pages was published in facsimile, in order to test the question of a complete edition in large phototype plates, such as has now been undertaken. The editing of the work has been undertaken by the Royal Academy dei Lincei. The work will be published in thirty-five parts, each containing forty heliotype plates, at a cost to original subscribers of £48 or \$240. For foreign and tardy subscribers the price will be somewhat more. It was decided that it would be out of the question to attempt a systematic rearrangement of the drawings, so that they

will be published in their present order. The manuscript notes on the drawings are difficult to decipher, are often obscure in meaning, and at times impossible to translate. No translation of them will therefore be attempted; but beside the phototype reproduction, they will be given in an exact transcription; and in order to facilitate their study, a special dictionary will be compiled of words that are obsolete or of doubtful meaning and their equivalent in modern Italian given. The transcription is to be by Dr. Giovanni Piumati; the dictionary by Luca Beltrami.

Some idea of the scope of the work may be obtained from the following statement in the introduction: "In the Codex Atlanticus his marvellous genius asserts itself in the full variety of its manifestations: in military art, with numerous drawings of mortars, among which the important suggestion of rifled ordnance; with various studies on fortifications, and with sketches of warships, including the interesting hint at propulsion by steam power; in astronomy, with observations on the movement of the earth; in physics, with notes on gravity, equilibrium, light, acoustics, flight and other natural phenomena; in hydraulics, with drawings of a number of water-engines and navigable canals; in geometry, with studies for the measurement of the area of the earth, and with the sketches of geometric figures which were destined to enhance the value of Luca Pacioli's treatise, *De Divina Proportione*; in mechanics, with drawings of tools and engines of every description for sawing marble, wood, etc.; in industrial work, with indications of the process of pavement making and lock manufacture, of weaving and bronze casting; in architecture, with numerous drafts and plans for churches and other buildings, cupolas and monuments; in painting, with sketches on perspective and notes on painting in general. And if the Codex does not seem to be as wealthy in notes and drawings in art as in science, yet the outlines of the paintings of 'The Adoration' and of 'St. John,' the sketches for the equestrian statue of Francis Sforza, and the studies for Leda and for the celebrated portrait of Beatrice of Este, are not less important for the history and study of Leonardo's pictorial and sculptorial creations. Even traces to reassert his fame as a poet are not wanting in Leonardo's Codex Atlanticus."

The sole agent for the United States is Gustav E. Stechert, 810 Broadway, New York. A. M.

ALOIS RIEGL. *Stilfragen. Grundlegungen zu einer Geschichte der Ornamentik.* 8vo, pp. XIX-346, with 197 illustrations. Verlag von Georg Siemens. Berlin, 1893.

This book is a consideration of the foundation of ornament, and is based chiefly upon ancient historic art. For eighteen years Herr

Riegl was in charge of the textile department of the Royal Austrian Museum for Art and Industry. He was naturally led to give special consideration to Semper's theory of the origin of ornamental forms in textile fabrics. The first portion of his work, which treats of the geometric style, is written in opposition to Semper's theory. According to Riegl, the existence of elementary geometric forms in widely separated countries does not necessarily apply intercommunication. He therefore favors the theory of separate origins. Nor does he think it necessary to assume that such forms arise in general from the art of weaving, since they are found amongst races who were presumably unacquainted with weaving and lived without clothing. He places the origin of such forms in the natural love for decoration, without special reference to material. He next considers what is known as the Coat-of-Arms Style—*Wappenstil*. This he disassociates from the art of weaving and connects psychologically with the love of symmetry. The greater portion of the book is taken up with a consideration of early floral ornamentation and the development of honeysuckle ornament. This he traces to its earliest origin in Egypt and follows it through Mesopotamia, Phœnicia, Persia, Greece and Rome, and in derivative forms in Byzantine and early Saracenic art. In this portion of his book he comes into close quarters with Professor Goodyear, whose important work upon the Grammar of the Lotus has great weight with him, although he differs from Professor Goodyear in a number of details. The vine or honeysuckle ornament he considers a creation of Greek art, although admitting its element to be of Oriental origin. It is interesting to have thus clearly portrayed in a logical and historical treatise the life of an ornamental form which originated in the remotest antiquity, became widely diffused in mediæval times, and which survives in much of the decoration of the present day.

A. M.

SOLONE AMBROSOLI. *Manuale di Numismatica*. 16mo., pp. XV, 250, with 120 illustrations in the text and 4 plates. Ulrico Hoepli, Milano, 1895.

A year ago the distinguished numismatist, Dr. Ambrosoli, published his manual of numismatics in the series of the manuals issued by Ulrico Hoepli, at Milan. The edition was soon exhausted, and the little volume before us represents a second edition, in which corrections and additions have been embodied. The book deserves a wide circulation, since it contains in very compact form a large amount of useful material upon the entire field of numismatics. After giving definitions and general notions he surveys the field for Greek, Roman, Byzantine, Mediæval and modern numismatics, adding

a chapter upon medals. In each of these chapters he gives a special introduction, many bibliographical references and a few half-tone representations of coins. More valuable still for purposes of reference are the tables appended to his chapters, which afford a means of ready reference for the identification of coins by their inscriptions. The book contains naturally most abundant information upon Greek, Roman and Italian coinage, though references are given by means of which the subject may be extended not only through Europe, but also to Asia and North and South America. It would be difficult to find a manual containing so much information in so small compass; nevertheless, the publishers offer the volume at the extremely low price of 1.50 lire. A. M.

CHARLES DIEHL. *L'Art Byzantin dans l'Italie meridionale.* (Bibliothèque internationale de l'art.) 8vo. pp. 267. Paris, 1894, Librairie de l'Art.

The present volume is the result of two journeys undertaken during 1883 and 1884 in Southern Italy in the provinces of Terra d'Otranto, Basilicata, Calabria and Sicily, with the object of studying the influence of Byzantium upon the Italian art of the South. Several of its chapters have appeared in part in reviews: in the *Mélanges de l'Ecole française de Rome*, in the *Bulletin de Correspondance Hellénique* and in *l'Art*. M. Diehl has made a specialty of Byzantine studies, and other works of his have become standard authorities. Such are his studies on Byzantine administration in the exarchate of Ravenna, on Byzantine administration in Africa, on the church and mosaics of St. Luke in Phokis. He has mastered to an unusual degree two distinct branches of Byzantine studies—the historic and the iconographic—and these stand him in good stead in his present work.

Some of the frescoes which are described in this book, and form the principal material for the author's judgment, have been described in previous works, such as Salazaro, Schultz and Lenormant, but by far the greater part are either his own discovery or have been noted merely by local antiquarians, whose criticisms have remained unnoticed or are of but little value. Aside from the great frescoes of St. Angelo in Formis and the mosaics of Sicily, the paintings described exist either in small churches and chapels or in subterranean crypts and hermit grottoes of modest pretensions. These works are studied in geographical groups: the first is that of Terra d'Otranto with its grottoes and subterranean chapels; the second group is that of the region about Tarentum; the third is that of Matera, and the fourth comprises Calabria. In chapter IV is a very interesting treatise on the

origin and artistic character of the Italo-Byzantine frescoes of the entire South; in it he gives a summary of the results of his study of all these groups of frescoes. He shows that although modest in their pretensions, they are of great importance for the history of Byzantine painting, because they are about the only untouched examples of this branch of Byzantine art that have remained from the Middle Ages. The series extends from the tenth to the thirteenth centuries in an unbroken succession, and reflects all the changes which Byzantine art in general underwent during this period. M. Diehl gives a remarkable lucid example of this in his essay upon the changes in the type of Christ. One of the most interesting points that he treats is the relation of the native art to the Byzantine school. He shows how at first the Byzantine school was almost in sole possession of the field, how gradually there grew up by its side a native school largely in imitation and how this native school developing during the thirteenth century replaced the Byzantine during the course of the fourteenth, but in many cases retained characteristics of its former master, largely on account of the persistence in Southern Italy of a population that was still Greek in its church rites, its language and all its affiliations and sentiments.

The chapter on the Byzantine mosaics of Sicily is a prose poem and the most fascinating part of the book. As a prelude we have a study of the cosmopolitan civilization of Sicily under the Normans. "For about a century—the only one of mark in its history—Palermo showed to the world a unique and wonderful sight: under the influence of a foreign dynasty, that of the Norman princes, who were in reality the national house of Sicily, it produced a refined civilization, an original and charming art, which was in its time, the first in the world, an art fascinating above all, which combined and fused three apparently irreconcilable elements, the Byzantine world, the Arab world, and the Latin world, which by the chances of conquest had been placed side by side in the land of Sicily, and out of them made the most extraordinary and attractive *mélange* that ever was." M. Diehl passes in review the acts and policy of each of the Norman kings, Roger I, Roger II, William I and William II: he shows what wonderful skill was shown by these rulers in holding the balance between the discordant elements that made up their population—Latin Catholics, Greek church, Mussulman: a spark would kindle a conflagration.

A. L. F., JR.

ARCHAEOLOGICAL NEWS.

SUMMARY OF RECENT DISCOVERIES AND INVESTIGATIONS.

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AFRICA.

EGYPT.

EGYPT EXPLORATION FUND.—The eighth ordinary general meeting of the Egypt Exploration Fund was held in London on October 26, the President, Sir John Fowler, being in the chair. The financial report for 1893-4 was read by the honorary Treasurer, Mr. H. A. Grueber. First dealing with the accounts of the Exploration Fund as apart from those of the Archaeological Survey (for which latter separate subscription has always been asked), Mr. Grueber pointed out that the expenditure for the year 1893-4 had been about £2,415, and that this sum included the large outlay involved by the excavation of the temple of Deir el Bahari (the expenses under this item being the heaviest ever incurred by the fund), the cost of publications and the ordinary and extraordinary office expenses. Since the total receipts for the same period had only amounted to some £1,773, owing to the falling off of subscriptions from England, America and abroad—but more especially from America—the expenditure for the year had exceeded the receipts by over £600. The receipts of the Archaeological Survey during this year had been about £681, and its expenses the same, one satisfactory item of expenditure having been the payment of an installment of £104 towards the debt of £700 incurred by the survey to the Exploration Fund proper during the year 1892-3. Mr. Grueber earnestly appealed for increased public support; for, since the committee had found it impolitic to delay the clearing of the temple of Deir el Bahari, the expenses of the forthcoming season must of necessity be as great, if not greater, than those of 1893-4.

The statement of the honorary Secretary, Prof. R. S. Poole, announced the publication of an introductory volume on Deir el Bahari, being the Exploration memoir for 1892-3; "El Bersheh I.," being the third memoir of the Archaeological Survey of the Egypt Exploration Fund, and issued to the subscribers for 1892-3; and of the *Archæological Report* for 1893-4. Advanced copies of the three publications were placed on the table. The *Archæological Report* not only contains brief accounts of the society's own excavations, and of all others made in Egypt during the season of 1893-4, but also an editorial report by Mr. Griffith on the general progress of Egyptological research, together with papers by Mr. Cecil Smith on "Græco-Egyptian Antiquities," by Mr. F. G. Kenyon on "Græco-Egyptian Literary Discoveries," and by Mr. W. E. Crum on "Coptic Studies." Each article has its bibliographical appendix, and the *Report* contains maps, illustrations and a plan of the temple of Deir el Bahari. Representative series of negatives of photographs taken in connection with the work of the society are now being made at the London office, so that any one wishing to purchase such photographs on lantern slides may there make his own selection.

Mr. Ed. Naville, the director of the excavations at the temple of Deir el Bahari, gave a brief summary of his work there. Mr. D. G. Hogarth addressed the meeting about the temple of Deir el Bahari, answering the various criticisms made against the excavations and their great expense. He was afraid that in the future they would not get very many small objects at Deir el Bahari, except in the northern part of the central platform. Here there was still an enormous mound, which had been fifty feet and was now twenty feet high, and at the western end of this there was still an apparently almost untouched part of the temple. While that mound was being removed two pairs of eyes must be incessantly upon the watch. When that was finished they would come upon a piece of ground which had been worked over and over again, and was, in fact, absolutely honeycombed with holes, there being no two feet of earth which had not been dug.

Sir John Fowler then asked the consent of the meeting to the following presentations: To the British Museum, fragment of limestone from the excavations at Tell Baklieh (1892), inscribed in sunken hieroglyphs with the name of the ancient Egyptian city of that site—*Bah*, in the nome of Thoth—and dated XXXth Dynasty; a fine bronze from Bubastis, inscribed around base and representing the cat-headed goddess Bast and four kittens. To the Museum of Fine Arts, Boston, U. S. A., fragment of limestone slab inscribed with hieroglyphs in relief, and coming from the excavations at Tell Mokdam (1892), a site which M. Naville has identified with the Leontopolis of Strabo; a

fine unused mummy-case from the embalmers' quarters in the temple of Deir el Bahari, inscribed for Na-Menkhet-Amon, a prophet of Amon, connected with the royal family of the XXIInd Dynasty, one of his ancestors having been son to an Osorkon and brother to a Takelothis.

In the evening M. Naville gave a full and interesting lecture on his work at Deir el Bahari, illustrated with admirable limelight photographic views of the excavations in progress, and of the beautiful halls and sculptures which he has restored to the knowledge of the world.—*Academy*, Nov. 3, 1894.

MR. PETRIE'S EGYPTIAN RESEARCH ACCOUNT.—It was announced, in the *Academy* of Sept. 29, that it was proposed to establish an Egyptian Research Account, with the object of enabling some of Prof. Wm. Flinders Petrie's students, whom he has thoroughly trained in his methods, to undertake separate branches of exploration under his direction. Subscriptions should be sent to the treasurer, Mr. F. G. Hilton Price, 1 Fleet street, E. C.—*Academy*, Sept. 29.

In a subsequent issue of the *Academy* Professor Petrie issued his appeal under the title "The Rescue of Egyptian History." He says: "The destruction of the monuments and historical records of Egypt, which is going on year by year, threatens soon to leave no history to be further recorded. Every season sees buildings ruthlessly destroyed for the sake of materials, and a host of objects plundered by natives from towns and cemeteries in order that they may be scattered without name or record among the tourist flock. Even those objects which pass into museums have lost most of their importance and of their value in losing all record of their original place and circumstances. The laws of Egypt may be excellent in theory, but in practice it is perfectly well known that hundreds of persons join in this destruction—yet no man is punished for it. . . . To avoid this prevalent system of mere plundering, trained hands and heads are needed to observe and to record. Such is the scarcity of suitable workers at present that even the Egyptian Government is obliged to leave most of its excavations in the hands of natives, from whom no record is ever obtained or expected. Before we begin the salvage of the wreck, which is breaking up fast before our eyes, we need men who can put information in a permanent form as they discover it. In short, scientific training is indispensable.

"But at present there is no means of acquiring such training. The Egyptian Government is concerned to keep its antiquities safe, and to find objects for its museum. The French school—liberally maintained by the French Government—is concerned with the desirable work of copying, reading and publishing inscriptions. The Egypt Explora-

tion Fund is concerned with excavating temples and finding big monuments. There are no regular and independent workers of any nationality, except one or two English. No public body does anything for the great subject of the civil life, archæology and anthropology, of the country; and there is no place where any student can get training in the very elements of archæological research. There is no lack of men willing to do such work: several have applied to me since Egyptology has been at last publicly established in this college. My earnest wish is to be able to encourage such workers, and to see a sound British school of scientific archæology established in Egypt. The first and most essential step is to be able to help men who come forward, and to cover their expenses and costs of work. The historical results and the objects procured by excavation in any reasonably good site are an ample justification of the cost incurred.

"The aim of the Egyptian Research Account, which is now established, is not to undertake great clearances or exploits in the country, but to fit men for work of the highest class archæologically, and at the same time to benefit our knowledge and our museums as far as may be, by means of their excavations. Mr. Hilton Price, the director of the Society of Antiquaries, attends to the financial side of the receipt and custody of all subscriptions. A cordial response has been made in many quarters, and over £200 has been received. Audited accounts will be annually rendered, and a publication of the work done will be given to each subscriber. As to the actual work, I hope to superintend two or three able and suitable men, whose expenses may be thus partly provided for, and who will work in the neighborhood of my own private excavations year by year. A very good ground for such work has been applied for this year, and without any cost whatever to the Research Account. I shall be on the spot, carrying on my own work, and be able to help and guide the new enterprise. Whatever antiquities may be found in this work for the Research Account will be divided amongst public museums, with due regard to the localities of subscribers; but no money will be used in carrying great blocks, which might as well remain in Egypt."—*Academy*, Oct. 20.

QUESTION OF PHILÆ AND THE ASSUAN DAM.—Mr. W. E. Garstin, Under Secretary to the Egyptian Ministry of Public Works, has issued the note upon the proposed modifications in the Assuan dam project, which was approved in principle by the government last June. That project consisted in the construction of a dam having its crest at the reduced level of 114 metres, which would provide storage for water sufficient for the irrigation of Middle and Lower Egypt during the months when the Nile is low. Many European archæological societies protested strongly against this scheme, involving as it did the submer-

sion of the celebrated Philæ temples, together with a considerable number of important Nubian monuments, for a period of six months each year. The Ministry has endeavored to reconcile the material interests of the country with those of science by submitting a modified scheme, which has received the approval of the government, and the financial problem will be dealt with in the coming budget. This present plan provides for a dam at Assuan having its crest at the reduced level of 106 metres, or 8 metres (26 feet) lower than that originally proposed. This will retain water sufficient for either Middle or Lower Egypt, but not for both. The adoption of this plan involves a much slower reclamation of the country, but entails the submersion of only a part of the Philæ Island, containing the smaller monuments, which could be protected by special works to be planned in accordance with the wishes of the learned societies. It leaves the other Nubian monuments untouched. In order to minimize still further any possible loss to science from the construction of such a vast reservoir, topographical surveys will be made this winter to fix the true bearings of the Nubian monuments, so that the learned societies may take measures to protect them if they see fit to do so.—N. Y. *Evening Post*, Dec. 8.

The latest stage of the question is about as follows, as stated in the London *Daily News*: "As the result of their deliberations at Philæ in regard to the measures to be taken for the protection of the temples from injury by the construction of the new Nile reservoir, Mr. W. E. Garstin and the archaeologists with whom he has been in consultation are unanimously of opinion that nothing can be finally settled on the point until the mass of débris and the mud-brick erections which cover a large portion of the island are removed and the underlying masonry is laid bare. This masonry will have to be subjected to a scientific examination in order that a solution of the many vexed questions concerning the age of the Philæ temples, etc., may be arrived at. Mr. Garstin therefore asks the government to grant sufficient money to carry out the above work, which he says is of the highest importance."—N. Y. *Evening Post*, March 23, 1895.

In the meanwhile the committee of the Society for the Preservation of the Monuments of Ancient Egypt have published (Kenny) a useful pamphlet, dealing in a popular manner with the proposed reservoirs in the valley of the Nile. After a general statement of the question a list is given of the chief objects of archaeological, historical, and artistic interest that would be submerged by a dam at Assuan, showing that the Temple of Philæ is by no means the only one, or even the most important; and at the end is a sketch map, on a large scale, marking the principal sites mentioned. It is shown that a large

number of the most important monuments of Nubia would be submerged if the original project were carried out.

GREEK INSCRIPTIONS AND PAPYRI IN EGYPT.—Professor Sayce publishes under this title an article in the *Revue des Etudes Grecques* for July-September, 1894. He first speaks of the inscriptions which he discovered when in company with Professor Mahaffy in a journey beyond the first cataract. Amongst the inscriptions is a poem in 34 lines, painted in red, above the second door in the south wall of the fore-court of the temple of Kelabsheh. This Ethiopian poem has been restored and interpreted by Henri Weil, whose transcription is here given. The verses are correct, but the style is poor. The plan of the poem is as follows: (1) Introduction. (2) Recital of a dream which the poet had in the subterranean part of the sanctuary of the god Mandoulis, who is identified with Horus. In this crypt there existed apparently an oracle by incubation. (3) Apparition of Mandoulis, praise of him and the command given by him to the poet. There follows a translation by Weil. The second (2) inscription is also painted in red capitals on the wall of the court of the same temple, and has been published also by Mahaffy in the *Bull. corr. Hell.*, XVIII., p. 151. (3) The third inscription, on the south wall, was already known from the *Corpus*, Vol. III., 5039. The most of the other inscriptions are unimportant or fragmentary. Two of them found in the quarries behind the temples are evidently Christian, but contain strangely Pagan sentiments. One mentions Vestinus, who was Prefect of Egypt under Nero, and gives for the first time his precise date and his full name. Another one dates from the year 211 under the Emperors Caracalla and Geta. The first of the papyri published undoubtedly comes from the Fayum, but was bought at Cairo by Mr. Fraser, and afterward being copied of Professor Sayce, was stolen and has disappeared. Some fragments here published belong to the ancient Cuse and relate to a corporation of grave-diggers called *νεκρόταφοι* a word which has been met with only in the Egyptian poet Manetho. The date of these fragments is about 305 B. C., while another dates from the reign of Philip (244-249 A. D.)

PTOLEMAIC INSCRIPTIONS.—In the *Mittheilungen d. k. deut. arch. Inst.*, 1894, p. 212-287, Max L. Starck publishes and discusses seven *Inscriptions of the time of the Ptolemies*. No. 1 records the dedication of a strip of land to the great great-god Suchos in honor of King Ptolemaios, also called Alexander, the god Philometor. This is Ptolemaios Alexander I. No. 2 records the dedication of a temple, sacred precinct, and officers to the great goddess Isis in honor of Ptolemaios, son of Ptolemaios, the god Epiphanes and Eucharistos. This is the eldest son of Epiphanes. The word *Μαρονεύς* in this inscription is derived

from Maronis, a deme of Alexandria. No. 3 is in honor of Apollonios, son of Thou, on account of his goodwill toward King Ptolemaios and Queen Kleopatra, gods Epiphaneis and Eucharistoi and their children. No. 4 is in honor of King Ptolemaios and his queen-sister Kleopatra and queen-wife Kleopatra, gods Energetai and their children. The date is 144-132 or 124-117 B. C. No. 5 is in honor of King Ptolemaios and the queen-wife Kleopatra, gods Energetai and their children. Like No. 4, the dedicator is a foreign officer of the guard. No. 5 is dated Oct. 3, B. C. 129. No. 6 is dedicated to the goddess Arsinoë Philadelphos. No. 7 appears to be a forgery. It pretends to be a dedication to Epiphanes by one Kallistratos and his soldiers.

CAIRO.—ADDITIONS TO THE MUSEUM.—The following report has been received by the Egyptian Exploration Fund from its local honorary Secretary for Cairo, Captain H. G. Lyons, R.E.: "Among the recent acquisitions of the Giza Museum, perhaps the most noticeable are two squads of soldiers from the VIth Dynasty tomb at Assiut, which have been found since last winter. Each squad consists of forty figures, fixed to a wooden board in rows of four, and shown in the act of marching. The first one is composed of men of a brown complexion, presumably Egyptians, with thick heads of hair fastened back with the usual band, which is tied behind. The figures are of wood and are about thirteen inches high, the whole squad being well sized and containing few men below the general standard. They are clad in a loin-cloth, white or yellowish in color, reaching rather more than half way to the knee, while their equipment consists of spear and shield. The spears are about the height of the men themselves, and are carried vertically with the butts at the level of the knee. The heads are bronze, and make up about one-sixth of the total length of the spear, becoming very broad where they meet the haft, like the large spears of the Baggara Arabs of to-day. The shields, which are about eight inches from top to bottom, have a square base and come to a point at the top. Inside there is a wooden batten across them, at the part where the shield begins to narrow, which serves to carry it by. All the shields are painted with rude splotches of color, or irregular mottling, while some show a zigzag pattern of lines, or even diamond bands, almost calling to mind the bars of heraldic shields; but so far as the position of the soldiers bearing these in the squad goes, nothing tends to show that they had any distinguishing value.

"The second squad are black-skinned, and have the hair similarly dressed and tied back, while their clothing consists of a very scanty loin-cloth of a red or yellow color, and some few also wear necklaces and anklets. They are armed with bows and arrows only, each man

carrying four arrows in his right hand and a bow in his left. These arrows are tipped with flint, which is shaped to a chisel-like edge and not to a sharp point.

"The race distinction between the two squads is very marked, by a difference not only in complexion, but in size; for the black soldiers are at least half a head shorter, and have, besides, a much larger proportion of small men in their ranks. These smaller men are, just as in the Egyptian squad, arranged in the left centre section, *i. e.*, in rows 6, 7 and 8. The Egyptian squad is closely 'locked up,' which contrasts strongly with the much looser formation in which the black troops are marching; and though this may be partly due to the fact that the blacks are armed with the bow instead of the shield and spear, still the impression which one gets is that they represent the irregular forces rather than the regular drilled bodies to which the other squad seems to belong.

"From Dashur are two large boats, now on view in Room No. 16. They are about the same size and of a similar type, but one is considerably better preserved than the other. Of the former, almost the whole hull and a considerable part of the deck remains, as well as four or five of the cross thwarts on which the deck is laid. The extreme length is about thirty feet, beam seven feet, and in depth about three feet. The planks of the hull are fixed together with dove-tailed dowels and wooden trenails.

"An extremely fine model of a boat comes from a XIIth Dynasty tomb at Assiut. It is five feet long and about fifteen inches broad. It is fully decked over, and the after part of the deck is occupied by a two-roomed cabin, which takes up rather more than half the whole deck space. Each room has a wooden door, on which is drawn a portrait of the owner of the tomb, with his titles; in the forward cabin five figures are seated, while on the forward part of the deck are two more figures seated and two standing, one of whom is in the bow with a punting or sounding pole. The cabins are roofed over with bent wooden rafters neatly fitted together. The mast is stepped in a hole in the deck, and supported by a wooden box, which was strengthened by three wooden struts to keep it firm."—*Academy*, Oct. 27th, 1894.

DAHSHUR.—DISCOVERY OF JEWELRY AND TOMBS.—M. de Morgan has made a further discovery of jewelry of the XIIth dynasty, similar in beauty and quantity to his famous discovery of last spring. The *Chronique* (1885, No. 11,) gives an account of the discovery of a part of this jewelry in two tombs which were found near those previously discovered and belonging also to the XIIth dynasty.

The first tomb contained the sarcophagus of Princess Ita-Ourt. The mummy still wore a pearl necklace with gold pendants, bracelets

with beads of gold, of cornelian, emeralds, lapis-lazuli, etc. It was covered with very beautiful stuffs, and around it lay sceptres, a bow, a mace, all in perfect preservation. Around the sarcophagus was an extremely interesting collection of funerary objects, such as perfume-burners, vases filled with cosmetics, still sealed, etc.

In the second tomb was enclosed a granite sarcophagus in which, according to the inscriptions, lay the body of Princess Sit-Hat, decorated with necklaces and bracelets of gold and with pearl parures. Among the usual funerary objects there was found a unique piece, namely, a swan carved in wood, which for a wonder had been preserved.

TOMB OF USERTESSEN AND NORTHERN PYRAMID.—M. de Morgan has succeeded in entering the tomb of Usertesen III, and is now investigating the northern pyramid of Dahshur, which has never been attempted. Excavations carried on around the monument have already brought to light vast constructions in crude brick, which appear to be special chapels, and also the houses of priests attached to the service of the pyramid.—*Chronique*, 1895, No. 6.

KARNAK.—The Society for the Preservation of the Monuments of Ancient Egypt has issued an appeal for a special fund to be devoted to preserving the Temple of Karnak from further decay by pumping the water of the Nile inundation out of the ruins. Donations may be sent to the honorary Treasurer, Mr. F. G. Hilton Price, 17 Collingham gardens, S. W., or to the honorary Secretary, Mr. Edward Poynter.—*Academy*, Nov. 10, 1894.

LUXOR.—M. G. Daressy, of the Ghizeh Museum, Cairo, has issued a pamphlet in which he describes fully the temple of Amenophis III at Luxor; he also discusses the repairs and additions thereto made by later kings of Egypt, and he gives a clear plan, showing the results of the excavations made during the last few years by the administration of the Ghizeh Museum. A list of the names of the Egyptian royal benefactors of the temple, printed in hieroglyphic characters, adds to the value of this work.—*Athenæum*, May 12.

MEMPHIS.—**FRENCH EXCAVATIONS.**—The efforts of the French archæologists during 1894 were centered on the Necropolis. While M. de Morgan was carrying on his excavations at Dahshur, MM. Gautier and Jaquière explored the environs of Licht, where they have been working since the beginning of the autumn according to a well-thought-out plan, with the object of bringing to light all the monuments of the ancient and new empire. Their greatest discovery has been that of ten statues in perfect preservation, 1.80 m. high, all of them representing King Usertesen I, the second sovereign of the XIIth dynasty. They were found in a hiding place made next to the funeral chapel of the

king. There were discovered at the same time some tables for offerings and a large number of fragments.—*Chronique*, 1895, No. 6.

CENTRAL AFRICA.

The *Nyasa News* reports the discovery of curious works in stone at Fwambo and other places on the plateau between Lakes Nyasa and Tanganyika. They consist of spheres, discs and slabs, 3 in. to 6 in. in diameter, and perforated in the centre. The stones are of various kinds, but always hard, and occasionally roughly polished. The natives, among whom stone-cutting is an unknown art, describe these finds as "works of God."—*Athenæum*, Nov. 3, 1894.

TRIPOLI.

RAMADA.—M. Philippe Berger has submitted to the *Académie des Inscriptions* the facsimile of an important bilingual inscription—Latin and neo-Punic—found by M. Foureau on an ancient mausoleum at Ramada, in South Tripoli, during his recent mission to the Touareg tribes of the Sahara. Ramada appears to be the point furthest to the south where Latin inscriptions have been found in this region. This mausoleum was erected in two stories surmounted by a pyramid, and was dedicated to the memory of Apuleius Maximus Rideus (?) by his wife Thanubra and his children. The inscription is carved above a large bas-relief representing the deceased and his wife, accompanied by a series of classical scenes—Orpheus and Eurydice, Hercules and Alceste, etc. It is noticeable that whilst the names of the ancestors of Apuleius are altogether Punic, he bears another name, Latin and Punic, and his children bear names purely Latin.—*Athenæum*, Aug. 25.

TUNISIA.

BISERTA.—The *Vossische Zeitung* describes a silver sacrificial bowl which was lately found while dredging in the harbor of Biserta, the ancient Carthaginian Hippo-Zarytos. It is oval in form, shallow, and provided with two handles, and weighs nine kilogrammes. The inner surface is richly ornamented with a design in inlaid gold, representing the conflict of Apollon and Marsyas. A satyr plays the double flute before the muse, the arbitrator of the contest, around whom are grouped the partisans of the two competitors. It is a Hellenic work of the first century of our era, at which period the present Biserta was a Roman colony, and is undoubtedly the most valuable piece of workmanship in the precious metals which has as yet been discovered in Africa. It is now in the possession of the Bardo Museum.—*Athenæum*, Oct. 6.

CARTHAGE.—DISCOVERIES IN THE PUNIC NECROPOLIS.—The latest discoveries made by Father Delattre have been made in a Punic necropolis near the Serapeum. A large Punic tomb which had never been opened was found, and the contents were intact and undisturbed. A number of other tombs surrounded this large monument. It is now possible to form a clear idea of this necropolis, situated in the part of the ancient city where no one would have suspected the existence of Punic tombs. When the excavations have been finished it will be possible to compare these tombs with those of the various other necropoli of the city. Thus far not a single drinking-vase, with the mouth on its belly, nor a single unguent vase, so common elsewhere, have been found. Neither have there come to light any Punic coins, tufa sarcophagi, amphoras for child burial or urns enclosing bones, nor is there any trace of cremation.

Père Delattre has excavated in the previously discovered Punic necropolis two fresh tombs, the contents of which proved of more than ordinary importance. In the first, of rectangular form and of a style belonging to the sixth century B. C., was found the skeleton of an adult whose cranium presented all the characteristics of the Phœnician type. The rich objects lying around the body showed that he was a person of some distinction. The other tomb, discovered in the same trench, contained a vase of fine black clay, a goblet of red clay with black line ornamentation, the base of a vessel of similar make and decoration, an incense-burner of brown clay, a Punic lamp, some shells, a small bronze axe, a bronze mirror, two alabaster vases, some scarabæi, some *figurini* of Anubis and of Ptah, and some ornamental objects in silver and agate.—*Athenæum*, Dec. 22, 1894.

KOURBA.—At the session of the Academy of Inscriptions and Belles-Lettres, held on January 25, M. Michel Bréal communicated a Latin inscription recently found in Tunisia, which is remarkable both for its historical contents and for some linguistic peculiarities. This inscription was found at Kourba, not far from the city of Tunis, by Capt. Lachouque, of the geographical service of the French army. It is of the year 49 B. C., and recalls one of the most dramatic epochs of Roman history. The personages named in it have been made familiar by Cicero, Lucan, Appian and especially by Caesar, who speaks of them at length. It refers to the putting into a state of defence of Curubis (now Kourba) at a time when it was in the hands of Pompey's followers, and when they were expecting an attack from a force landed from Caesar's fleet. The inscription gives a quite new military term, *posticus*, a word hitherto unknown. It means either some military work of inside fortification or else a sally-port, a postern. At the same session of the Academy M. Dieulafoy, the well-

known explorer, was elected to membership.—N. Y. *Evening Post*, Feb. 25.

LOUDNA.—RUINS OF A ROMAN VILLA.—New discoveries have been made in the ruins of the Roman villa, already noticed in the *JOURNAL* (IX, p. 271) which is being cleared at Loudna. Three new chambers have been found decorated with geometrical ornamentation, alternating with birds and theatrical masks. They open to the right and left on apartments which have not yet been cleared. The last room is connected by an entry with a vast hall as remarkable for its architectural arrangement as it is for the richness of its ornamentation. The five columns supporting the roof are divided into two parts, one surrounding the other. The first, attached directly to the wall on the west side, is separated on three of its sides by a colonnade from the outer portico. To the east are the doors of three symmetrical small chambers decorated in exactly the same manner. Their walls are covered with white stucco decorated with frescoes. One of these paintings representing two theatrical masks has been transported to the museum of the Bardo. The pavement is formed of white mosaic, divided into rectangular sections, in the centre of which is the head of a pastoral divinity. The mosaic of the atrium is extremely elaborate. The frame consists of fifty-eight medallions in two rows each, enclosing a different subject: an animal, a bird or a geometrical design. In the intercolumniation is a frieze with lions and panthers pursuing a deer. Finally, in the space enclosed in the colonnade, is the principal picture. It represents a farming scene of the Roman period. In the background is the dwelling of the master, a farm-house with monumental façade with a *porte cochère*, a second smaller door and two windows on the first floor. Against the house leans a plow, under the porch rests a shepherd leaning on his crook and counting his goats, who are returning from the field. In front of the farm-house is a large hut for the slaves and the watering trough fed from a well by a *balancier*, like those which are so often seen in France, especially in regions where wood is abundant. A slave is working it to give drink to the horses. To the right a slave is leading a mule heavily laden, whom he is doubtless taking to market, and a laborer is prodding up two oxen who are pulling a plow. Other pastoral or hunting scenes surround the central composition. To the right a shepherd is milking goats, another is picking fruit and the third is playing on a double flute. In the centre is a mountainous bit of scenery, and we see a boar hunt, and further on a hunter hiding under a goat skin crawls along after some partridges and quails, and finally, to the left is a wounded lioness fighting two mountain huntsmen, who are killing her with javelins.

ALGERIA.

RUSUCUM-TIGGERT.—EXCAVATIONS OF THE BASILICA.—The excavations in the Basilica of Rusucum have been finished. It is found that the building consists of three naves divided into eleven bays, supported by double columns. In the apse are two doors still in place, which communicate with the sacristies. It is built with material from ancient temples, and contains more than a hundred columns over one metre in diameter. The ground is entirely covered with a mosaic pavement. A large part of this rich decoration has disappeared, but certain fragments of it remain. In the midst of elegant ornamental designs there were many inscriptions, devices, moral maxims and symbolical compositions, such as the sacrifice of Abraham. Among the sculptures found are two of remarkable interest: one representing a scene of martyrdom and the other Balaam striking his ass. The architect charged with the excavations believes that the Basilica was built in the fifth century, restored in the sixth and destroyed by fire probably at the time of the Arab invasion.—*Chronique*, 1894, No. 26.

TIPASA.—In the *Mélanges d'Archéologie et d'Histoire* (Oct. 1894), of the French School at Rome, S. Gsell makes an extended study of the Roman town of Tipasa. Although situated but a short distance from Algiers, the ruins of Tipasa have not yet been the subject of a special monograph, although many notes concerning it and special monuments have been published in various reviews. Little is known of the history of Tipasa; its name is Phœnician, and the Carthaginians had a settlement here. Coins from Carthage, Numidia, Greece and Rome have been found here. Inscriptions refer to a municipal council and to a quinquennial duumvirate. Under the Antonines and the Severi Tipasa reached its period of greatest prosperity. At first situated upon the hill, the town extended into the plain. This extension appears to have occurred during the second half of the second century of our era, at which time the town may have had a population of twenty thousand inhabitants. Tipasa appears to have been a commercial town; its port, it is true, was not a good one, but its geographical position offered commercial advantages. Tipasa had commercial relations with the east, and with the west as far as Gaul and Spain. Though surrounded by a strong rampart, she seems to have had no regular garrison. Her public buildings were numerous, but not luxurious. The population seemed to have enjoyed a comfortable subsistence, but rich men were rare. It was not an artistic centre; the sculptured sarcophagi found there were apparently imported. Christianity seems to have been very flourishing at Tipasa.

The ruins are amongst the best preserved in Algeria; they occupied a central hill and a portion of two other hills; their extent is a kilome-

tre and a half from east to west, and 750 m. at the point of greatest breadth from north to south. Large necropoli are found outside of the rampart at the eastern and also at the western end. Within the rampart there is also a cemetery of the end of the first or beginning of the second century of our era. The extent of the town appears, in earlier days, to have been smaller, since there is a mausoleum within the rampart, a position which the Romans would not have allowed. As regards the Phœnician site, there is no certainty, but this town, like the first Roman settlements, was probably situated upon the central hill. The rampart is nowhere well preserved, but is recognizable; in its full extent it was 1.60 m. broad and well constructed; it was fortified with round towers and quadrangular bastions; there were three gates, each of which was defended by four towers. The rampart does not antedate the first century after Christ, and its destruction is not due to time alone. It was probably made an open town in the second half of the fifth century, for we know from Procopius that Genseric dismantled all the towns of Africa of their walls, in order to prevent his subjects from revolting and the Romans from finding fortified places in case they wished to make war against him. The port was situated between two small islands and the eastern hill, a common Phœnician custom.

The most important ruin is that of the baths; it is constructed partially of brick and partially of stone; it has not yet been entirely disinterred, but the number of the rooms and the general arrangement is sufficiently evident. Southeast of the baths is the amphitheatre, in a bad state of preservation; this is oriented from southwest to northeast, and measures 100 m. in length. It was surrounded by several public monuments; the most important of these was a civil basilica, or perhaps a market place. Its precise purpose cannot be determined.

The central hill was probably the site of several ancient temples, and was known later as *Templensis*: only a few ancient fragments of the temples have survived. This central hill seems also to have been the site of a church erected in honor of St. Salsa. On account of the abundance of vegetation, even the site of this church is uncertain. To the west of the amphitheatre was a semi-circular Nymphæum, a portion of which remains. M. Trémaux preserves in his garden a fragment of a marble statue found on this site. This Nymphæum is of moderate dimensions, of mediocre construction and of late date. The aqueduct which brought water to Tipasa terminated a few metres south of this fountain. The remains of several of the constructions are found in the neighborhood of the Nymphæum, amongst which may be mentioned a Christian basilica, the capitals of whose columns, in debased Ionic style, belong to the Byzantine period. At the eastern

extremity of the rampart are found the remains of an important building; this was a basilica 52 m. in length, by 45 in breadth, one of the most important Christian edifices in Africa. The interior of the building was divided into seven aisles, separated by piers carrying archivolts. The central nave measures 13.50 m. It was entirely decorated with a mosaic pavement which covered a superficial area of 700 square metres. At a later period the central nave was divided by two rows of columns, thus making nine aisles in all. To the north of the basilica were connecting buildings, which have in great part fallen into the sea. The adjoining baptistry was a square building and had a mosaic pavement, in one corner of which is found an inscription badly preserved.

In the eastern portion of the town can be distinguished an ancient road, and the remains of buildings and cisterns of no great importance. The most interesting of these appears to have been a public granary. Throughout the town there are many remains of houses. Brick was but little used, on account of the abundance of stone. In general the stones were only roughly blocked out, cut stone being used for the angles, door-jambs, sills and lintels. The roofs were made of wood and covered with tiles. The window openings presented geometrical figures and sometimes Christian symbols.

Outside the old town at the E. end is found a necropolis containing tombs of three different kinds: (1) Troughs cut in the rock and containing ashes of the dead; (2) ditches for bodies that were buried; (3) caverns constructed of cut stone, or cut in the rock, and containing either buried or burned bodies. Usually the bodies were laid upon the ground without coffins. In one tomb the body of an infant was found, placed between two halves of an amphora, according to the mode of burial very common in Africa, and from the Carthaginian period down to the Christian era. As most of these tombs had been visited and robbed, it is difficult to give a full view of their contents; however, there were discovered as many as thirty-nine different kinds of vases, besides lamps and objects of bronze, such as mirrors, strigils, bracelets, earrings and coins. This necropolis appears to belong to the first century of our era. Several sculptured marble sarcophagi have been found, some notice of which is given further on. The Christian cemeteries are situated outside of the ramparts; one at the east, and one at the west. These two necropoli with their thousands of tombs well preserved, form certainly one of the archaeological curiosities of Algeria. Each of them contains an important edifice; that at the east, the basilica raised upon the tomb of St. Salsa; that at the west, the funerary church of Bishop Alexander. In the centre of the basilica of St. Salsa is a pagan tomb, surmounted by a cippus, upon

which is an inscription to Fabia Salsa. The church of Bishop Alexander is situated about 200 m. from the rampart to the west of the town. The plan is trapezoidal, and is divided into three aisles, the central nave being entirely paved with mosaics. These mosaics present pompous inscriptions. Various kinds of tombs are found in these cemeteries, but the practice is of burial only, with no funerary objects. Some of the tombs are cut in the rock; others are sarcophagi of stone or of terracotta; others, again, are buildings or mausolea of various forms.

Outside of the ramparts may be traced with certainty four ancient roads, one going to Cæsarea, a second to Icosium (Algiers), a third in the direction of Montebello, and a fourth to Aquæ Calidæ. There are in the neighborhood of Tipasa many ruins, but they present little interest. Of these may be mentioned an elaborate farmhouse and a fortified residence. Tipasa is far from having furnished as many figured monuments as her neighbor Cæsarea, where at the time of Augustus there reigned a prince who was fond of the arts, and which, during the Roman rule, was the capital of the province. Besides religious and funerary steles, Tipasa has furnished a number of richly sculptured sarcophagi. One of these called the "sarcophagus of the married couple", contains four divisions on its principal face, one of which represents the hand-shaking, the other the sacrifice. In the outermost compartments are figured the Dioscuri. A second sarcophagus represents the story of Pelops and Enomæus. A third contains the representation of the Good Shepherd; the fourth represents the seasons, and a fifth Hebrews carrying the grapes of Canaan. Amongst the other objects worthy of mention are a few engraved gems and a large silver patera now in the Louvre.

ASIA.

ARABIA.

JOURNEY OF MR. BENT IN SOUTHERN ARABIA.—The article of greatest popular interest in the *Geographical Journal* for October is Mr. J. Theodore Bent's account of his recent expedition to the Hadramaut in Southern Arabia. This is a singular valley running for a hundred miles nearly parallel to the coast, and on the average about that distance from it, and inhabited by intensely fanatical Bedouins and Arabs. Though known from remotest antiquity as the centre of the trade in frankincense and myrrh, no European has succeeded in reaching it till last year, Mr. Bent's party being the second. The name means in the Himyaritic language "valley of death," which "in

Hebrew form corresponds exactly to that of Hazarmaveth of the tenth chapter of Genesis." It is a fact, interesting especially to Biblical students, that the most sacred places in the valley are the primitive tombs of the legendary prophets Saleh and Hud (or Eber, a synonymous term), names which will be found in Genesis in close connection with that of the valley. The appearance of the valley from the arid plateau is very remarkable. It contains some fine and lofty palaces, rich in carving, and ruins of great antiquity, somewhat similar to those found in South Africa, and exhibiting a few Himyaritic inscriptions. The jealousy of some of the tribes, however, prevented any thorough exploration, which Mr. Bent reserves for a second expedition.—*New York Nation*, Oct. 25.

BABYLONIA.

ABU-HABBA.—Father Scheil, the French dominican archaeologist, is in charge of a government mission for excavations at Abu-Habba for the Constantinople Museum, to which he has dispatched numerous Assyrian inscriptions and remains.—*Athenæum*, Sept. 1.

NIFFER-NIPPUR—DISCOVERIES OF THE PHILADELPHIA EXPEDITION.—The excavations at Niffer, commenced some five years ago by an expedition sent out from Philadelphia under the auspices of the University of Pennsylvania, have not yet come to a close. They will be continued during 1895 under the direction of Mr. Haynes, who has had charge of them for over three years. Too much praise cannot be given to his devotion. He has continued the excavations through the entire year, during the wet and the heated seasons, when, thus far, all excavations have been stopped.

Dr. Peters has given in this number of the *JOURNAL* a detailed account of the results of the excavations on the principal mound, which he calls the "Temple Hill," or mound of the *Ziggurat*. In another paper, to be issued in the next number of the *JOURNAL*, Dr. Peters will describe discoveries in another mound at Niffer, and also report on one or more mounds at a certain distance from this city, and belonging to other ancient centres of population.

Our knowledge of the structural and decorative forms of early Babylonian architecture will be notably increased as soon as the results of the excavations can be given in their entirety. Even now we can foresee how students will welcome two facts that will be clearly brought out, namely, the use of the arch and of the column. Both the round and the pointed arch is found; these arches are true arches, built both of unburned and of burned bricks. The pointed arch is used in vaulted drains. A photograph has been sent by Mr. Haynes of the entrance to such a pointed, arched passage, which he attributes to the

Roman period. Dr. Peters, however, places it before the time of Sargon I, under whose level it was found. The round arch is seen in Fig. 7 of Dr. Peters' article on p. 20 of this number, in the doorways of the houses in the temple area.

On a mound at some distance from the Temple Hill a large structure has come to light, containing a most remarkable colonnade. This consists of a row of circular columns built up of pear-shaped bricks. This is an entirely novel disclosure of the resources of Babylonian architecture. Dr. Peters dates this work, I believe, in the second millennium, B. C. It will be remembered what a sensation was caused by the discovery at Tello, by M. de Sarzec, of the lower sections of two brick columns. These were not circular, but were a bundle of four interpenetrating circular shafts. The bricks used in their construction were of the same pear shape as those at Niffer. But at Niffer the circular form is for the first time found.

Prof. Hilprecht spent some months during the summer and autumn at Constantinople in connection with the Imperial Museum and to complete the organization of the Babylonian collections, resulting largely from the Sultan's share of the excavations. Last year Dr. Hilprecht spent ten weeks on these collections. He has also been engaged in preparing for the press the second volume of the publication of the detailed account of the American expedition.

At the meeting of the Philological and Archaeological Societies in Philadelphia, Dec. 27, Prof. Hilprecht showed in a detailed paper the importance of the Babylonian library found at Niffer. There are some twenty thousand inscribed bricks, cylinders or tablets. Historically their importance is great, as they give new names of kings and inscriptions of unparalleled length for the early and middle periods of Babylonian history.

TELLO-LAGASH.—A ROYAL BABYLONIAN VILLA.—At a meeting of the *Académie des Inscriptions*, on November 9, M. Heuzey studied in detail a group of structures and monuments lately discovered by M. de Sarzec, at Tello, the ancient Lagash or Sirpurla, belonging to the residence of the earliest kings, 4000 B. C. The earliest are recorded by foundation tablets of the Patesi Entemena, of which there are five new copies that aid in the interpretation of the text. This ruler figures here especially as a patron of agriculture. Among his favorite plantations are two woods, which he places under the protection of two different divinities, the Goddess Nin-harsag, the divinity of the mountains, and mother of the Gods, the Babylonian prototype of Kybele, and the Goddess Nina, the divinity of the waters, symbolized by a vase containing fish. To the same goddess he dedicated a sanctuary, as to "She who makes the dates grow." It is certain that, by means of the hydraulic

works, traces of which have been found on every side, the desert of Tello was at that time transformed into a real forest of date trees. The ancient Babylonians had a popular song celebrating the 360 benefits of the date tree. Among the gifts of the sacred tree, one of the most important was a fermented liquor, analogous to the date wine mentioned by Pliny, or the Arak of the Arabs. Certain constructions found by M. de Sarzec (a kind of press or oval basin, cellars whose walls contain bituminated vats in the shape of amphoras), show that this was one of the most popular products of this royal villa.

DISCOVERY OF THE ANCIENT BRICK LIBRARY.—During the Eighth Campaign of excavations by M. de Sarzec, an important discovery has been made of a library of clay tablets with cuneiform inscriptions, numbering over thirty thousand. These are city archives, analogous to those found on the site of Nineveh, Sippara and Niffer. The find at Tello is the largest thus far made. The tablets were found under a mound about two hundred metres distant from that where the palaces of the ancient kings had previously been found. The tablets were arranged in five or six regular rows within narrow galleries intersecting each other at right angles. These galleries were built of crude brick, and on each side were furnished with benches, on each of which were placed other layers of tablets. There were two distinct groups of galleries near each other. They are comparable to the *favissæ* of the classic temples which received the surplus of offerings. Five thousand of the tablets are in perfect preservation, five thousand more are but slightly damaged; the rest are in fragments, but can, in many cases, be put together again. There are two copies of many of the official documents bearing the seals of the witnesses and scribes. There are accounts, lists of offerings, inventories, etc. Mingled with the tablets are numerous documents of different shape, such as truncated cones, barrel cylinders, sacred stones, statuettes. A certain number of tablets, and of sacred stones with archaic characters, belong to the earliest period of the civilization of Tello, that of Eannadu, the king of the Stele of the Vultures. The great majority, however, belong to two different types, the one resembling the inscriptions of Kings Ur-Bau and Gudea, the other more cursive, resembling more closely the Babylonian writing proper. Although these documents relate largely to religious subjects, many are of historic and chronological value from the names of the rulers that are mentioned, not only the rulers of Sirpula (or Lagash), but also those of the rulers of Ur, such as Dunghi, Gamil-Sin and Ibil-Sin, who shortly after the time of Gudea came into possession of this part of the country.

OTHER DISCOVERIES.—In continuing the explorations of the primitive strata that dated from the fourth millenium B. C., a number of

interesting structures were found, and several very early objects, such as two heads of bulls in copper, with incrustated eyes, a curious copper vase, and two new fragments representing the execution of captives, similar in style to the reliefs of the Stele of the Vultures.

In the second place the explorer undertook to clear the subterranean parts of the palace of Tello, where he carried on his first excavations, and especially the structure of Ur-Bau, the predecessor of Gudea.

Finally excavations were carried as far as the distant mounds to the south. There numerous monuments were found upon the site of an ancient sanctuary.

Of a special importance was the discovery in the midst of a stratum of fragments of sculpture and of inscribed stone vases, of a number of statuettes, the heads and even the profiles of which are intact. As all the statues thus far found have been headless, this discovery is of great interest for the study of the Babylonian type.

All the objects discovered have been handed over to the Turkish delegate to be placed in the Museum at Constantinople.

BABYLONIAN AND ASSYRIAN ANTIQUITIES.—Dr. Rifaat Effendi, a physician in the Turkish army, some time ago gave to the Imperial Museum at Constantinople a collection of vases he had made during his services in Irak and Mesopotamia. He has now presented a finer collection of Assyrian tablets, inscribed vases, signets, gems, a small Byzantine candelabrum and other objects.—*Athenæum*, Sept. 22.

PERSIA.

A PARTHIAN STANDARD.—M. Heuzey described at a meeting of the French Academy of Inscriptions a peculiar bronze from Persia, now in the Museum of the Louvre. It is a bronze circle within which are cut out five or six figures of Gorgons pursuing one another in fantastic course. This carved disk is separated by two reclining bulls, and is decorated on the outside like Greek mirrors with figures of animals in relief. All around are aquatic birds, and at the top a reclining deer. The form recalls very closely that of the military standards represented on the Assyrian bas reliefs, except that the god Assur shooting an arrow has been replaced by the Greek motive of the Gorgons, which carries the same idea, both protecting and terrifying. The style is that of the Parthian period. The combination of Oriental and Greek motives is explained by the great influence which the Hellenic element preserved in the Parthian empire, where it had been planted by the Macedonian Conquest, and the movement of colonization which followed it.—*Chronique*, 1895, No. 3.

SYRIA.

PROPER NAMES IN THE AMARNA TABLETS.—J. Perruchon publishes in the *Revue Sémitique* for October, 1894, an alphabetical index of the proper names contained in the letters found at Tel El-Amarna. This list is extremely convenient for reference and important for the geography, history and language of Syria, Phœnicia and Palestine in the xv cent. B. C.

THE SEPULCHRAL MONUMENT CALLED NEPHESEH.—The Semitic word נפש designates not only the *soul*, but also a funeral monument of a special kind. It designates the stele in the form of a pyramid. The term is used in a monument of this form from Petra (Vogüé, *Syrie Centr.*, p. 90), and in the bi-lingual inscription of Suweida (*CIS.* II, 162), the Nabathæan נפש corresponds to the Greek στήλη. In Matth. I, 13 (27-28) Simeon Maccabeus is said to have erected over the tomb of his father and brothers seven pyramids, called in the Greek πυραμίδας, and in the Syriac נפש; the seventh being reserved for himself. This text not only makes the form of the monument certain, but shows that as many pyramids were erected as there were persons buried. This is confirmed by the Medeba inscription (*CIS.* II, 196), which mentions a tomb with two pyramids, one for each of the two defunct. The pyramid, therefore, as it represented the individual after death, his spiritual self, appropriately received as a name the same word that meant soul or breath of life. In earlier Hebrew times the monument to perpetuate the name of the defunct in the absence of children was called יד yadh, "sign," a term which was superseded a few centuries B. C. by the term נפש. In II Sam. XVIII, 18, Absalom is said to have erected a stele to himself in order to perpetuate his name in the absence of son; it was called the *sign of Absalom*, יד אבשלם. In Isaiah LVI, 5 Jehovah promises to faithful eunuchs as a compensation for the children that they cannot bear a *cippus and name* (יד ושם) *worth more than sons or daughters*.

A neo-hebraic passage in point is from the *Bereshith Rabba* (Sect. 82, fol. 92), and says: "Rabbi Simeon, son of Gamaliel, taught that steles were not constructed (אין בנין נפשור) over the just because their words are their commemorative signs."

At a later period the word *naphsha* takes in Syriac a more general meaning and is applied to an entire monument and in the dialect of Tirhan, to the north of Bagdad, it received the meaning of funerary chapel.—RUBENS DUVAL, in *Revue Sémitique*, July, 1894.

PALMYRA.—In the *Archæologischer Anzeiger* (1894, pp. 112-115), F. v. Duhn describes the *oldest View of Palmyra*, a painting by an unknown, G. Hofstede, dated 1693, 1 Aug. It is now in the entrance hall of the university at Amsterdam, and is in some respects superior to the "cu-

rious prospect" of the ruins published in *Philosophical Transactions*, xix (1695-97); cf. *Quarterly Statement of the Palestine Exploration Fund*, 1890.

SENDSHIRLI.—In the *Archæologischer Anzeiger* (1894, p. 188-190), is an abstract of a lecture by Dr. v. Luschan on the *Excavations at Sendschirdi*. The lecture was delivered before the Berlin Anthropological Society, Nov. 10th, 1894. The graves and buildings already discovered were described, and the future tasks of the excavators outlined. The buildings described belong to the VIII, and one possibly to the IX, century B. C. Reliefs of warriors and musicians, lions that stood by a gate, bases of columns in form of double sphinxes, one base in the form of a single sphinx, and also a sphinx in relief, are enumerated. The graves are small *tumuli*, terracotta coffins and sepulchral chambers. They belong to the VII and VIII centuries B. C.

PALESTINE.

RECENT PERIODICAL LITERATURE.—A late number of the *Journal* of the German Palestine Society (Vol. 17, No. 3) presents an inviting feast to the student of the Land and the Book. In an article of thirty-five pages Benziger begins a *résumé* of the Palestine literature of all lands for 1892 and 1893, covering 287 numbers. It is a bibliographical collection of exceptional value, dealing with all the phases of the problem except the strictly biblical. The discussions in this direction are best recorded in the Old and New Testament department of the well-known *Jahresbericht* of Holtzmann and others. In this connection it is interesting to note the rapid growth of bibliographical aids at the disposal of the Biblico-Oriental student. The Oriental bibliography, the international project so favorably inaugurated by the late Professor Müller, is now in the capable hands of Professor E. Kuhn. The French have been particularly active in this line, having begun three projects of this nature during the last few years, the *Revue de l'Orient latin*; the *Revue biblique trimestrielle*, published by the professors of the Dominican School at Jerusalem, and the *Revue Sémitique d'épigraphie et d'Histoire ancienne*, by Halévy. In addition the new German journal, *Byzantinische Zeitschrift*, edited by Krumbacher, deserves special mention. With all these literary aids it is impossible for the biblical Orientalist, and especially the special student of the Holy Land, not to keep track of the discoveries and discussions in this department. In the same number of the German Palestine Society *Journal*, the well-known architect, Schick, of Jerusalem, continues his investigations into the History of the Architecture of the City of Jerusalem, the present article covering the period from the destruction of Jerusalem by the Romans to the time of the

Crusaders (70-1099 A. D.) Then come two newly discovered Greek inscriptions, one from Caesarea, both discussed by Professor Gelzer, of Jena. The latter is short but interesting, reading "μημόριον διαφέρων 'Μαρίας καὶ Ααζάρου," and the inscription is thought possibly to mark the traditional resting place of the brother and sister whom the Lord loved.

JERUSALEM.—EXCAVATIONS BY MR. BLISS.—The last three statements of the Palestine Exploration Fund (July-October, 1894, January, 1895), contain the reports by Mr. Bliss on his excavations at Jerusalem, to which reference has already been made in the JOURNAL. In the October statement his report is accompanied by a plan from the enlarged ordnance survey plan, in which the excavations are marked in red.

In his October report, Mr. Bliss makes the following summary of his work: "The present report, written sixteen weeks after my last, will, I hope, be taken as a report of progress. I have to announce the presence of a splendid line of rock, scarped for fortification for over three hundred feet. We have also followed outside this scarp a long line of actual wall (*in situ*), of fine masonry; we have traced a paved street leading to a gate in this wall, which is in all probability the Dung gate of Scripture. In my report dated June 6th, two weeks only after the excavations had been begun, I showed how we took up the work on the so-called rock scarp of Zion, beginning our digging just outside the Protestant cemetery; I described the tower built on the rock scarp, (one side of which scarp is visible under the cemetery wall running southwest), and I showed how we had traced the counter-scarp of the ditch for over one hundred feet in a northeasterly direction, following the direction of the rock scarp as previously known. I intimated that I felt doubts as to whether this ditch belonged to the outer line of the wall, as it does not follow a steep contour (such as those found lower down the hill), and leaves outside of it, to the south, a large gently sloping tract, which would naturally have been included within the town." In pursuance of this doubt, Mr. Bliss sank a shaft and drove a tunnel which resulted in finding the desired outer scarp at a distance of forty-eight feet from the mouth of the tunnel. It was this scarp which was followed for a distance of three hundred feet by means of deep galleries. At one end the workmen came upon an aqueduct which temporarily interrupted tracing the scarp further east. Mr. Bliss argues quite fully in favor of this scarp being part of the outer fortification of ancient Jerusalem. Beside this discovery Mr. Bliss reports that of a wall which was traced for a length of about one hundred feet. The finding of a drain led to the discovery of an ancient street, and finally of a gate in the

wall. At one point, they discovered the ruins of a house of Byzantine times, which had been built over the ancient disused pavement. The workmanship of the wall is exceedingly regular and exquisitely careful. The stones have smooth faces, are dressed, with the comb-pick (without draft), and the point of jointure is so fine that sometimes it is difficult to find. The gate in this wall is identified with the Dung gate of Scripture.

Information, received by the Palestine Exploration Fund, of the work of Dr. Bliss at Jerusalem since his report printed in the October *Statement*, shows that he has found the gate near the southwest angle of the wall to which the lately uncovered paved road led. This gate stood four feet higher than the road, and the sill is *in situ*. Upon going just four feet lower, Dr. Bliss found a still older gate, which is clearly a part of the earliest wall. Thus he has opened the foundations of the times of the kings. Four large, square towers have also been uncovered near the same corner. At the same time Herr Schick reports the discovery of the gate called as early as XII century the Leper's Gate. This is the present northern wall, and seems to indicate that that wall never lay further out than it does now. This has an important bearing on the question of the sepulcher.—N. Y. *Independent*, Nov. 1, 1894 (cf., *Academy*, Nov. 3).

The Rev. Theo. F. Wright, U. S. Secretary of the Palestine Fund, gave an account of the latest discoveries at the meeting of the American Congress of Philological and Archaeological Societies held in Philadelphia at the close of December.

LATIN INSCRIPTION OF TRAJAN.—Mr. James Glaisher, chairman of the executive committee of the Palestine Exploration Fund, writes as follows:—"Letters have been received from Dr. Bliss and Herr von Schick, stating that the iron-bound door of Neby Daûd, which had remained open against the wall for a number of years, having been recently blown down during a severe storm, there was disclosed on one of the stones behind it an inscription which seems not to have been before noticed. It is in Latin, and according to Dr. Bliss's report, is a votive tablet to Jupiter on behalf of the welfare and greatness of the Emperor Trajan and the Roman people, erected by the Third Legion, which takes us back to the interval between the destruction by Titus and the founding of Aelia Capitolina. It was partly covered with plaster, and may have been entirely covered when the door was last opened and shut, which may account for its being unnoticed. It is built into the modern wall about 15 feet above the ground. Roman inscriptions are very rare in Jerusalem, and this discovery is, therefore, of exceptional interest. A squeeze of the inscription is expected to arrive shortly. Up to the date of his last despatches Dr. Bliss was still tracing the line

of the old wall, which he had followed for over a thousand feet."—*Academy*, Dec. 22, 1894.

A BYZANTINE MOSAIC PAVEMENT.—In the construction of a new house on the site of the small hill north of Damascus gate, outside of Jerusalem, there was discovered, about three feet below the surface, an extremely beautiful Mosaic pavement, evidently belonging to a mortuary chapel. It is almost perfectly preserved. Near the east end there is an Armenian inscription to the effect that the place is in memory of the salvation of all those Armenians "whose names the Lord knows." The mosaic is about twenty-one feet long by thirteen feet wide, with a small apse pointing almost exactly east. Within a beautiful border springing from this vase is a vine whose branches form a symmetrical system of scroll work, extending over the whole surface. Tendrils and leaves grow at intervals, and branches of grapes hang so as to fill up the background, and the space within the scroll work is filled with numerous birds; peacocks, ducks, storks, an eagle, a parrot in a cage, cocks, etc. The mosaic is similar to that found not long ago on the Mount of Olives with an Armenian inscription (described in the *JOURNAL*), but it is also far more elaborate, being the finest work of the kind ever found in Jerusalem and unsurpassed elsewhere. It is evidently Byzantine in style. Mr. Bliss attributes it to the fifth or sixth century, although it may date a from somewhat later period. It is illustrated and described in a summary way in the October number of the *Palestine Exploration Fund*.

ASIA MINOR.

DISCOVERY OF CUNEIFORM INSCRIPTIONS ON HITTITE SITES.—M. Chantre has reported to the French Academy of Inscriptions upon the results of his archaeological explorations in Asia Minor during the past year. The discovery of cuneiform texts in the Hittite citadel of Boghaz-Kewi, and that of the ruins of a Pelasgic city in the mound of Kara-Euyuk near Cesarea are two facts which throw an entirely new light on the history of Asia Minor. Cuneiform texts were also found at Kara-Euyuk, some of them of the Achemenid, the others in an unknown language. The discovery of these texts in the province of Pterium adds considerable to the area of Assyro-Babylonian expansion. The discovery of a Pelasgic city opens up a new phase in the question of the so-called Mycenaean civilization, the existence of which in Asia Minor had hitherto been barely suspected. Details of M. Chantre's discoveries have not yet been published, but a large publication is at present in the press.

MR. MONRO'S EXPLORATION.—Mr. Monro wrote from Brussa on Sept. 1, 1894, "I have just returned from a fortnight's tour with Prof. Ander-

son of Sheffield and Mr. Anthony of Lincoln College, Oxford, through the country to the west of Brussa, about the great lakes and the lower valleys of the Rhyndacus, Macestus, and Tarsius. It is surprising that this district is not better known. The roads are easy, etc.

"*Apollonia*, it is true, has often been visited from the time of Le Bas onwards, but inscriptions, reliefs, and small antiquities are continually turning up, and the town is full of them. The great temple in the lake, the walls with Hadrian's architrave built into them, and the tombs in the necropolis form a group of monuments of rare interest.

"From *Apollonia* it is a hot, uninteresting ride along the north shore to *Ulubad* on the Rhyndacus, just below where it emerges from the west end of the lake. *Ulubad* represents *Lopadion*, important in the Byzantine wars for its bridge. Several broken-backed arches of the ancient bridge still encumber the banks a few hundred yards above the modern structure. The bridge was guarded by a Byzantine fortress on the south bank of the river, within the walls of which the older part of the village is enclosed. There are also relics of a Byzantine church. Some important inscriptions, however, seem to show that *Ulubad* is much older, indeed pre-Roman. Were it not for the possibility that they have been brought from a distance to adorn the Byzantine church, one would say that *Lopadion* is merely the later name for *Miletopolis*. At *Mihalitch*, the site commonly assigned to *Miletopolis*, we found nothing of early date.

"The country between the lakes is a vast plain, mostly under water in the wet season, and broken only by low ridges. Between *Mihalitch* and *Panderma* we saw a strange relief of three horsemen in Oriental dress galloping over two corpses. The work appears to be comparatively late, but recalls in general the types of the Lycian reliefs. We also copied a Roman milestone at *Omerkeui*, the eighth stone from *Cyzicus*. After visiting *Panderma* (*Panormus*), *Cyzicus*, and *Erdek* (*Artace*), we struck inland through *Edinjik*, and round the western side of the *Limne Aphnitis* to *Manias*. It is two or three miles to the east of the *Tarsius*, and two hours to the northwest of *Old Manias*, which lies close under the mountain of the same name. On an isolated spur of the mountain, overlooking *Old Manias*, is a remarkable cluster of ruins. The hill-top has been a strong Byzantine fortress; on the shoulder of the mountain behind is a large early Turkish tomb; and on the isthmus between the two, in the midst of a tract of loose stones, stands a ruinous mosque. Marble blocks from earlier buildings have been freely used in the construction of all three. In the tottering wall of the fort in particular there is a course of small marble columns, stuck end on into the masonry, and another course of square bases. We read two inscriptions in this wall, one of them an important

honorary decree by the demes, peoples, and individuals in Asia in alliance with the Romans. There can be little doubt that the site represents the ancient Poimanenon.

"From Manias we followed a difficult hill-road to *Balukiser*. The oldest object in the town seems to be the fine cloistered mosque; and although *Hadrianuthera* must lie somewhere near, the obstructive tactics of the local authorities prevented our hearing any information about it. Leaving *Balukiser*, and shaking off the dust of our feet against it, we turned northeastwards by the *Panderma chaussée*. Soon after we began to ascend from the flat plain to the harder ground of the hills, we became aware of an ancient paved road keeping company with the *chaussée*, now on the right, now on the left. We followed the same route for about an hour and a half, until the ancient road plunged down the valley of the *Hatab*, where we afterwards found it near *Omerkeui*, while we climbed the *Demirkapu* pass, and descended again into the *Macestus* valley to the hospitable roof of the director of the English Borax Mine. A couple of miles below the mines, just below the point at which the *chaussée* joins the *Macestus*, here freshly emerged from a mountain gorge, there is a ruined Roman bridge. The *débris* in mid-stream was blown up about fifteen years ago by the original French lessee of the mine, who hoped to make the river navigable for the transport of the mineral. There must have been at least ten arches in the bridge. Without doubt the ancient road we have traced is the Roman road, or rather one of the Roman roads, from *Cyzicus* to *Pergamus*. It loses itself a few miles below *Omerkeui*, but I would suggest that one branch continued down the *Hatab Dere*, and rounded the eastern spur of the *Manias Dag*h, passing near *Poimanenon* and on to the east of the lake, while another crossed the bridge and made for *Ulubad*.

"*Kussaba Kirmasti*, finely situated on both banks of the *Rhyndacus* where it breaks through a gap in a ridge, seems to be an ancient site, possibly *Hiera Germe*. The hill on the right bank is crowned by a mosque, in which are two fine Byzantine windows and other fragments; and we copied an inscription at another mosque on the left bank. From *Kirmasti* to *Brussa* we took the road along the south shore of the Lake of *Apollonia*. We found inscriptions at *Akcheler* and at *Tachtaly*."—*Athenæum*, Sept. 15.

A second letter dated, *Smyrna*, Oct. 1, 1894, reports on their expedition into the hills. "The district which we have attempted to explore is almost enclosed by the *Rhyndacus* and the *Macestus*. These rivers rise close together in the neighborhood of *Simav*, and again approach within a few miles of one another near *Kirmasti*. The country between them is a maze of rugged ridges and rocky ravines, mostly

clothed with forests of pine and oak. The streams run in valleys so narrow and difficult that the roads, or rather bridle paths, can seldom follow them, but are driven up hill and down dale to the most toilsome and circuitous routes. It is not surprising that such a bit of country contains few traces of antiquity, and remains very imperfectly known. Consequently, whereas our archæological finds lie chiefly on the outskirts of our field of exploration, our discoveries in the heart of the region are mainly geographical."

Starting from Brussa, they struck the Rhyndacus a little below the ancient Hadriani. "Proceeding eastward, we inspected Delikli Tash, the interesting Phrygian tomb two hours short of Tavshanly, which has been fully described by M. Perrot. At Tavshanly, and at its older suburb Moimul, there is an extraordinary abundance of ancient sepulchral *stelæ* of one uniform type, an *ædiculum* with gable and arch over a closed door, on which are sometimes represented emblems of the occupation or profession of the deceased. The general idea of the type may well have been traditional from the days when the Delikli Tash tomb was hewn. The stones are now the favorite form of fountain in Tavshanly and Moimul. It is evident that a considerable ancient city must be placed hereabouts; but opinions may differ as to its name, and, in the absence of books, I decline to hazard a suggestion."

"From Tavshanly we took an unexplored road south-westwards to Emed, which seems to be placed rather too far to the south on Kiepert's map. Indeed, the geography of this district is altogether misrepresented. Emed lies under the brow of a ridge overlooking a long slope to the south, at the bottom of which flows a tributary of the Rhyndacus, coming down from the Shaphana Dagħ. We are able to give some support to Prof. Ramsay's conjecture that Tiberiopolis is to be sought in the neighborhood of Emed. We found there some very large columns and a great number of inscribed bases and *stelæ*. Unfortunately few of the inscriptions are legible, owing to the weathering of the soft stone. There is a plentiful hot spring below the town, which must have recommended the site for settlement. But the most striking and interesting proofs of antiquity are a jug and a bored stone, which we purchased from a laborer. They were found in a simple rock-cut grave recently opened on the west side of the town. Had I met with the jug in a European museum, I should have said without hesitation that it came from Cyprus, or possibly' Caria, or the Troad. I am not aware of anything like it having been found in the heart of the interior. At Egriguz, a few miles to the west of Emed, there are a couple of inscriptions which have, perhaps, been carried thither. The mediæval castle, on a pinnacle of rock overhanging the

Iron Gate, seems to be the oldest building. At Assarlar, however, there are not only inscriptions, but traces of building, and two parallel walls of massive masonry sticking out of a hillside in a situation which suggests a temple site.

"We crossed the watershed to the Macestus valley by a long and difficult mountain track, and visited several small sites to the north and west of the Lake of Simav, but could hear of no important ruins in that direction. Accordingly we returned to the Rhyndacus basin by the easy pass traversed by the Balat road. It is in this valley that the other branch of the Sinjan Su takes its rise, and we intended to explore the river right down to Kestelek. Opposite to Sinekler, under the village of Tashkeui, there are remains of a sanctuary with dedications to Zeus Pandemus and to a hero Olympiodorus. Except at Balat, we found scarcely a trace of antiquity between this shrine and Kestelek. Kestelek has its mediæval castle (well placed on a spur which almost blocks the Rhyndacus valley) and a few inscribed reliefs. Thence we turned northwards again, and made for Kepsud, keeping the Chatalja Dagħ on our right. This was another unexplored road. It presents few difficulties, but few points of interest. Kepsud lies in a plain, separated only by a low rise from the main valley of the Macestus and the great plain of Balikesser. There are plenty of "ancient stones," and some inscriptions, one of which suggests that Hiera Germe was here, and not at Kirmasti or Kestelek.

"The Macestus valley is as easy as the Rhyndacus is difficult. One readily understands why Cicero calls Cyzicus the door of Asia. Panderma, the modern successor to Cyzicus, is the main outlet for the trade of this region. At Persi, two hours to the northwest of Bigaditch, we found a curious rock-hewn church. Standing out from a hillside, an isolated pinnacle of rock known as Kissili Kaia overlooks the village and the Macestus valley. Its upper part is completely hollowed out. At the top is a square chamber with stone benches along each side, probably a hermit's cell. Below, one enters first an ante-chapel, one side of which is occupied by a rock-cut tomb, and then the little church itself, with triumphal arch, apse, throne, and piscina, all complete. Opening on to these by three doors in the north wall are a chapel and tomb chamber, separated by a rock screen, and a third chamber at a higher level at the west end. There are benches, niches, vaults, arches, and domes cut in the solid rock, and remains of frescoes on the walls. Here and there is a rude piece of carving, apparently birds and beasts. It seems to me not unlikely that this extraordinary little church was developed out of a series of rock tombs, probably of pre-Christian date."—J. ARTHUR R. MUNRO, in *Athenæum*, Sept. 15 and Oct. 20.

ARABIC EPIGRAPHY IN ASIA MINOR.—M. Camille Huart continues to publish in the *Revue Sémitique* (Jan., Apr., July and Oct., 1894) his contributions to the Arabic epigraphy of Asia Minor, of which we summarized the first installment in a previous number.

Konya.—(1) Inscr. at the Tach-Medressê, showing that the convent was built by 'Izz-ed-din Kaï-Kaûs II in A. H. 659 = 1260-61 A. D. (2) In the wall of the Seïd Mahmûd Turbêsi, an insc. stating construction of mosque under Kaï Kobad I, in A. H. 621, by a native of Konya. (3) In the same turbê, on the door, a record of the reconstruction of the tomb in A. H. 812 = 1409-10 A. D. It is interesting to note the inscription on an enamelled brick, showing that this decorative work of the monument was due to an artist of Mosul Ahmed ben Abd Allah. "It proves that early in the xv century this kind of decoration, of Persian origin, was executed in Asia Minor by Arab workmen from the region of the Tigris."

(4) Inscription recording the completion of the mosque of Ala-ed-din under Kaï-Kobad I, after it had been begun by his brother and predecessor, Kaï-Kaûs I, as is shown in the three following inscriptions. The reign of Kaï-Kobad was the most brilliant of any of this dynasty, and was a period of great architectural activity.

Doğouz-Khânê.—Caravanserai built by Othman, father of Abd-er-Rahman, under Kaï-Khosrau I, in A. H. 606 or 607 = 1209-1210 A. D.

BITHYNIA.—INSCRIPTIONS.—In the *Mith. d. k. d. Arch. Inst. Athen.* 1894 (xix), p. 368-373, R. Foerster publishes five *Inscriptions from Bithynia*. Three are metrical epitaphs. The others short dedications to Zeus Epidemios and Zeus βάλμος. All are of late date.

GJÖLBASCHI-TRYSA.—In the *Mittheilungen Arch. Inst. Athen.* 1894 (p. 283-289), W. Gurlitt writes of the *Heroon of Gjölbaschi-Trysa*. He discusses the reliefs partly in opposition to F. Noack (*Mith.*, 1893, p. 305 ff.) The representations are conceived of as pairs, one typical and one mythical scene; e. g., a typical hunt (northern wall), and the Kalydonian hunt (southern inner wall). The conquest of the Chimaira points to the descent of the deceased from Bellerophon. The reason for the scene representing a man carrying some one in his arms is not known, but once that scene was given it was natural to select the rape of the Leukippidæ for another subject. The central part of the western wall represents a scene in the siege of Troy.

TROY.—In the *Mith. arch. Inst. Athen.* (1894, pp. 380-394), W. Doerpfeld gives a preliminary report of *The Excavations in Troy* during 1894 (pl. ix). A full report is to appear as a book. The circuit wall of citadel of the sixth or Mycenaean stratum was laid bare. The wall was very strongly built. Three gates and three towers are described,

in one of which latter was a well. The ruins of buildings in the citadel are all near the walls, as all buildings in the middle of the sixth stratum were destroyed (*cf.* Troja, 1893). The interior of the citadel rose in terraces toward the middle. Many small objects were found, but none of great importance. The earlier citadel wall of the second stratum was discovered. The remainder of the historic sanctuary of the Ilian Athena was excavated and foundations of a great stoa were found at the east of the temenos. A third Roman theatre came to light on the southern slope of the hill. Diggings outside of the akropolis proved that the plateau of the lower city of Roman times was, partly at least, inhabited in the period of the sixth stratum. No graves of this period were found.

THE REAL SITE OF TROY.—In the *Ἐφημερίς Ἀρχαιολογική*, 1894, pp. 69–100, G. Nikolaidēs writes on *Ilium according to Homer*. He brings forward from the *Iliad*, *Odyssey*, and later works arguments to show that the real site of Troy is Bunarbaschi. A cut gives the relief in the Capitoline museum, representing the life of Achilles. This is used as an argument in favor of the same site. Plate 3 gives a coin of New Ilium, the silver relief from Urg Kenai (*Ἐφ. Ἀρχ.* 1891, pl. 2, 2) and the drawing in the Ambrosian Library, fol. 54, (Inghirami, *gal. America*). The silver relief is explained as a fragment of the death of Hector. The women on the walls are Hekuba, Andromache, and their relatives. The archers and slingers are the light-armed forces of the Greeks.

ASIATIC RUSSIA.

BAKHCHISARAI.—RESTORATION OF THE ANCIENT PALACE OF THE KHANS OF THE CRIMEA.—All archaeologists will receive with pleasure the news that the government has granted 36,000 rubles for the purpose of restoring to somewhat of its former beauty the ancient Khan-Sarai, or palace of the Khans of the Crimea, at Bakhchisarai. The work of restoration is to be carried on under the direction of the Academician Kotoff, who is to restore it to the same appearance as when it was previously restored by Prince Potemkin for the reception of Catherine the Great in 1787. This ancient palace is reported to have been erected in the thirteenth century, and some portions belong to the eleventh century. The second court, which is called the new building, is entered by an iron gate, on which is the inscription stating it to have been erected by Menghi Ghirey Khan, who conquered the Crimea in 1480. In addition to the interesting suite of apartments contained in this court, are two fountains, one of which has been rendered historical by the famous Russian poet Pushkin, and the

inscription on it states that it was erected in 1756 by Khan Krim Ghirei in honor of Diliarah Bikeh, his beautiful Georgian wife, whom he could never induce to change her religion as a Christian to join that of the Mussulman.

Adjoining the Khan-Sarai is a large building containing the monuments of nearly all the Khans since 1654, and many tombs of the eleventh and twelfth centuries, as well as the tomb of Devlet Ghirey, belonging to the year 955. When I visited this old palace and passed two nights therein, two years ago, I was able, through the courtesy of the authorities, to examine all the interesting relics contained in this place, and although the original Tartar silk and satin hangings to the Khan's council-hall and private apartments were somewhat faded, yet the excellent manner in which everything has been kept, leaves the palace in almost its original condition, as when it was inhabited by the mighty Tartar Khans in bygone ages, notwithstanding that during the Crimean war it was used as a hospital, and that nearly 50,000 Russians were carried out of the building to find a resting-place forever within a few minutes' walk of its historical walls.—Odessa Correspondence, *London Standard*, in *N. Y. Evening Post*, March 30.

TURKEY.

CONSTANTINOPLE.—COLLECTIONS.—Photographs have been produced at Constantinople of the large collection of Seljuk, Turkoman and Ottoman coins in the Imperial Museum there, and an album has been presented to the Sultan, together with a special catalogue of the antiquities in the Museum. In consequence of this a further grant of 150*l.* has been made to print a catalogue of the general antiquities, and one of the numismatic collections. There has been brought to the Museum the head of a statue, supposed to be of a Jupiter, from the excavations going on at Hissarlik.—*Athenæum*, July 28.

Exploration.—Turkey will soon be a closed country to the archaeological amateur. At Kutahiyeh, in Asia Minor, the authorities have seized, on the premises of a foreigner, a carved marble slab he had purchased from a native. This has been sent to the Museum at Constantinople. At Voorla, on the Gulf of Smyrna, some sarcophagi have been found and dispatched to the Museum, after being examined by Mr. Humann, the archaeologist. The Turkish Press is taking an interest in such matters.—*Athenæum*, May 12.

Earthquake.—According to an official account of damage done by the earthquake, the great monuments have escaped: Santa Sofia, Nouri Osmanieh, Sultan Selim, Shahzadé, Laleli, and Sultan Ahmed.

They are declared not to have sustained any appreciable damage. The *Levant Herald* announces that the cupola of the Mosque of Santa Irene has been cracked in several places. Many old mosques and minarets are known to have fallen, and it cannot fail to be the case that many monuments of antiquity have been lost; and this not only at Constantinople, but throughout a large part of Asia Minor and Rumelia. —*Athenæum*, Aug. 4.

KYPROS.

FUNERARY SPHINX.—The stone sphinx discovered in 1886 by Ohnefalsch-Richter at Marion-Arsinoë, and now in the Museum of the Louvre, is of especial interest, as proving without a doubt the funerary use of the sphinx in Greek sculpture. It is known that the sphinx, as a funerary symbol, is of Oriental, and more precisely, of Egyptian origin. For the Assyrians, the sphinx was more particularly decorative. The Greeks borrowed from Assyria the type of the sphinx, and from Egypt its symbolic funerary significance. But before the discovery of the sphinx of Kypros the sphinx of Spata was the only Greek sculpture of this type whose funerary character could, with probability, be established. Its upper part is not finished, a fact which indicates that it was placed at a certain height. The back is also unfinished, so that it is clear that it could be seen only in front, and finally it was found in a necropolis with other decorative marbles certainly belonging to tombs. It must, therefore, have been placed at the entrance of a tomb, erected upon a column or base.

The sphinx of Kypros is even more certainly sepulchral. It was found in the necropolis of Marion in the midst of an avenue of tombs and near the entrance to one of them. On the same spot a second sphinx of same style and dimensions, but in poor preservation, was found. It seems evident that these two sphinxes were placed in front of the entrance of the tomb. Their style is that of the middle of the VI century, and the tomb itself, judging from the objects it contained, certainly dates from this period. The sphinx of the Louvre is extremely interesting also as a work of art. Although the head is certainly archaic in its character, it shows that the artist had gotten rid of some of the conventions which had trammelled the art of the VI century. He has diminished the obliquity of the eyes and given up the archaic smile. It is evidently a work of the great Ionian school of Asia Minor, whose influence was so universal during the VI century. —*Bull. corr. hell.*, August-October, 1894.

GOTHIC MONUMENTS.—Announcement has been made that the Louis Boissonet prize for architects and engineers will be given in the

year 1895 for the purpose of studying Gothic architecture in the Island of Kypros. A special study must be made of the monastery at Delapais, between Nicosia and Kerynia. This study involves that of the church, cloisters and rooms of the monastery, to be treated both from an historical and technical point of view. The wish is expressed that the Gothic churches in the neighboring towns Nicosia and Famagusta should also be studied. The stipulations of the prize call for drawings of the ground-plan, elevations, sections and important details. A monograph upon this subject must be prepared by April 1, 1896.—*Kunst Chronik*, Feb. 7, 1895.

KRETE.

PROFESSOR HALBHERR'S EXPLORATIONS.—After remaining on the island of Krete for an entire year, conducting explorations on behalf of the Archæological Institute of America, Professor Halbherr returned in the late autumn to Rome and is at present busy putting his results into shape for publication in this JOURNAL and afterwards in book form. The latest and perhaps the most important of his investigations—the excavation of the Byzantine structure of Gortyna—was not mentioned in the report printed in the last issue of the JOURNAL. Here were found the most important inscriptions of the season's work.

KRETAN HIEROGLYPHICS.—Under the title "Primitive Pictographs and a Pre-Phœnician Script from Krete and the Peloponnese", Mr. Evans writes an article of more than one hundred pages in the *Journal of Hellenic Studies*, vol. xiv, part 2, 1894. Having been led by the marks upon Mycænæan vase-handles to inquire into this subject, as has already been told in this JOURNAL (IX, p. 477), Mr. Evans made a journey to Krete where he obtained a large mass of material from inscribed vases and engraved gems, which enabled him to gather together a long series of pictographs and of linear signs apparently derived from them. Of pictographs, he found some eighty-two in number: of these six are derived from the human body; seventeen from arms, implements and instruments; eight from parts of houses and household utensils; three from marine subjects; seventeen from animals and birds; eight from vegetable forms; six from heavenly bodies and their derivatives; one is a geographical or topographical sign; four are geometrical figures and twelve uncertain symbols. Very many of these pictographs are found to resemble Egyptian hieroglyphics; on the other hand almost as many resemble Hittite forms. Considering that the choice of comparison is in the case of the Egyptian hieroglyphics very much larger than that of the Hittite, he infers a closer affinity to the Asianic side. This relationship is, at

most, of a collateral nature, since most of the usual Hittite symbols are conspicuous by their absence. Comparisons drawn with Kypriote symbols suggest that several systems had grown up out of still more primitive pictographic elements. Some evidence as to the chronology of these Kretan gems is afforded by the points of comparison that they offer with Mycenæan forms. From a gem found at Goulàs, Mr. Evans constructs a possible Mycenæan ceiling-decoration not unlike the sculptured ceiling at Orchomenos. Further comparisons drawn between early Kretan seal-stones and Egyptian scarabs of the twelfth dynasty, lead him to assume a Kretan period of earlier date than that usually assumed for the Mycenæan. Out of this pictographic series of symbols a linear and quasi-alphabetic system seems to have arisen. Such Kretan forms are identical in many cases with Ægean signs found in Egypt and with some Kypriote characters. The analogies found with the hieroglyphic systems of the Orient lead him to believe that he has discovered in these symbols the manner of writing of the Eteo-Kretans, recognized by the Greeks as the original inhabitants of Krete. This aboriginal race he believes extended from the eastern to the western end of the island. About 900 B. C., to judge from the bronzes of the cave of Zeus, there was a strong Assyrianizing influence, due no doubt to Phœnician contact: what is known elsewhere as the archaic period of Greek art, is here conspicuous by its absence. To the Phœnicians belongs the credit of having finally perfected this system and reduced it to a purely alphabetic shape. Their acquaintance with the various forms of Egyptian writing no doubt assisted them in this final development. Thus it happened that it was from an outside source that the Greeks received their alphabet at a later date. But the evidence now accumulated from Kretan sources seems at least to warrant the suspicion that the earlier pictographs out of which the Phœnician system was finally evolved were largely shared by the primitive inhabitants of Greece itself. So far indeed as the evidence at our disposal goes, the original centre of this system of writing should be sought nearer Krete than Southern Syria.

The Kretan seal-stones also throw a new and welcome light on the early culture of the Hellenic world. The implements and instruments of the early Kretans are here before us; the elements are present from which we can reconstruct larger decorative designs; here also are portrayed the ships they sailed in; the primitive lyres to which they sang; their domestic animals; the game they hunted; the duodecimal numeration that they employed. We see before us the prototypes of more than one of the characteristic forms of Mycenæan times and abundant proofs of a close contact with the Egypt of the twelfth dynasty.

In a paper read before the British Association and reported in the *London Times*, Mr. Evans gave reasons, based on his recent archaeological discoveries in Eastern Krete, for believing—what had long been suspected on historic and linguistic grounds—that the Philistines, who, according to unanimous Hebrew tradition, came from the Mediterranean islands, and who were often actually called Krethi in the Bible, in fact represented this old indigenous Kretan stock. In Egyptian monuments these people, who came from the ‘islands of the sea,’ were seen bearing tributary vases of forms which recurred on a whole series of engraved gems seen or collected by Mr. Evans in Eastern and Central Krete. Their dress, their peaked shoes, their long hair falling under their arms, all reappeared on Kretan designs representing the inhabitants of the island in Mycenaean times. In view of these facts, Mr. Evans asked whether certain remarkable parallels observable between some of the Kretan pictographs and the earliest forms of Phœnician letters might not best explain themselves by this early Kretan colonisation of the Syrian coasts.

DR. TARAMELLI'S INVESTIGATIONS.—Dr. Taramelli, of the Archaeological School of Rome, went to Krete last summer for the purpose of studying the prehistoric antiquities of the island. He also wished to prepare for publication an account of the chief antiquities possessed by the various collections of the place. Dr. Taramelli assisted Professor Halbherr in his investigations and will contribute some papers to the series to be published in this JOURNAL. [The sad accident which put an end to Dr. Taramelli's studies in Krete is referred to in the report on Dr. Halbherr's work in a late issue.]

DR. MARIANI'S INVESTIGATIONS.—Dr. Mariani, of the same school, has published his report on the ancient city discovered by him near Candia, which he thinks may be identified with Apollonia, and with the primitive site (afterwards changed) of Tylissos. He is preparing for publication a memoir on various Cretan antiquities, some of which are hitherto undescribed objects in the museum of the Greek Syllogos.

Aside from his early discoveries, Dr. Mariani tells of the main results of his investigations in the following letter:

“While on the mission with which I was lately entrusted by the Archaeological School of Rome, I was able to carry on researches in several districts of Krete, especially in the neighborhood of Canea and Rettimo and in the eastern portion of the island. My object was chiefly to study some of the more vexed topographical questions of the country, and to explore the more important centres of its pre-Hellenic culture. I reaped an abundant harvest of materials for forming a judgment on these points.

“I began by examining the remains of the pre-Hellenic necropolis of

KYDONIA, and was able to ascertain that, contrary to the opinion of Admiral Spratt, the site of the ancient city has been occupied uninterruptedly, and must be identified with that of the present town of Canea. Among the classical monuments here is a female statue of Doric style, which has hitherto passed unnoticed. By its characteristics it is connected with the cycle of works of art represented by the pediments of Olympia. A visit to APTERA enabled me to make a plan of the fine walls of the ancient city, while a tour in the district of Rettimo gave me a good idea of the plan upon which the cities of the interior were built.

"Of the discovery of a Mycenaean city at MARATHOKEPHALA, in the vicinity of Candia, I have already treated in a paper printed in the *Transactions* of the Royal Academy dei Lincei. In this neighbourhood I was able to determine the site of the two ancient harbours of Knossos: namely, MATION and HERAKLION, the former of which occupied the ground where Candia afterwards arose, while the latter must be identified with Amnissos. I next addressed myself to the identification of the sites of the Homeric LYKASTOS and of ARKADIA; and I succeeded in establishing the truth of Bursian's assertion, that the former was near the modern village of Kanli Kastelli. Some imposing archaic fortifications are to be seen under the Byzantine walls of the fortress which occupied the hill. Admiral Spratt placed Lykastos on the hill of Astritzi, some miles to the east; but the ruins there seem too insignificant, and also of a later period. As for Arkadia, it is situated exactly where Spratt placed it: namely, on the heights of Ascekephala, or, as they are by some called, Kastriotes; and its ruins extend, as I was the first to ascertain, as far as the summit of the neighbouring hill of Tshifoot Kastelli, now occupied by the remains of a fortress of later date.

"After examining the cities of the interior, I betook myself to the eastern districts. In travelling to Goolas I stopped at a hitherto unexplored locality called ANAVLOCHOS, where I found unmistakable traces of a very ancient settlement, the importance of which in Mycenaean times could not have been much inferior to that of the famous city to which I was directing my steps. An examination of the ruins of GOOLAS, the most remarkable of the prehistoric cities of Krete, taught me to distinguish several peculiarities in the architecture employed in the island at this early period for public and private buildings. The city occupied a crater-like hollow between two mountainous crests, each of which formed an akropolis extending up the western slope. In one akropolis are to be seen the ruins of a circular tower, while the chief building of the other is an oblong temple of peculiar construction, of which I intend to publish a plan made by

Dr. Taramelli, my successor in Kretan exploration. The heights of Goolas slope down towards the sea in the direction of the modern harbor of Haghios Nikolaos, the centre of the trade of the district of Mirabello at the present day. Here, in ancient times, was the city of *LATOS pros Kamara*. My investigations brought to light some important Greek inscriptions, of which one of the chief is the dedication of a shrine of Aphrodite, while another gives the name of a new Kretan tribe, that of the Anaischeis. Others, which are sepulchral, have made us acquainted with the site of the Hellenic and Roman necropolis of Kamara.

But the most important results of my campaign were obtained in the distant and isolated region of the Eteocretans. This forms the extreme eastern portion of Krete: it is a very mountainous region, separated from the rest of the island by an imposing range of lofty peaks, which seems to block all access to the isthmus of Hierapytna. Its chief modern centre is the harbor of SITIA, which gives its name to the whole district. A city of the same name existed in ancient times; and the first mention of it which has been found occurs in a remarkable inscription, which I had the good fortune to discover and copy in a house in the village of Piskokephalo. It comes from the ruins of Praesos, and contains a long treaty concluded in the Macedonian period between the Praesians and the citizens of Sitae and Stelae, concerning the fisheries and the trade in the purple *murex* on the coast of this part of the island. This document enables us to give credence to a passage of Stephanus of Byzantium, relating to the city of Stelae, placed between Praisos and Rethymna, which some have wished to correct by changing the two last names into Priansos and Rhytion, cities belonging to another and distant region.

The most populous part of the Eteocretan region was that of the so-called *pharangia*, in a very wild district near the sea. The Eteocretans had settled in very early times in the midst of these inaccessible ravines. Spreading from Praisos, their capital, they founded hamlets and fortifications on all the most commanding points. Sitia, the harbor of Praisos, was protected by three fortresses, Trapezous, Frankachora and Leopetra. Between Praisos and the eastern coast may be observed an almost uninterrupted series of ancient remains, which had not hitherto been examined: Sitanos, a small town with a sanctuary; Tsikalaria, an outpost; and Zakro, a considerable city connected, by means of two other fortresses situated in a narrow valley, with Kato Zakro on the coast. This latter has been described by Admiral Spratt. In the ruins called Aspra Kharakia, near Zakro, I am inclined to recognize a large temple with out-buildings, perhaps *thesauroi*. These remains exhibit none of the characteristics of an Eteocretan town, nor

any signs of defensive works, but resemble the ruins of Malia or Azy-mo, in the district of Mirabello, which were, I think, correctly considered by Spratt as belonging to a temple of Britomartis. As the temple of Zeus Dictaios was, according to the testimony of the Toplu-Monastiri Inscription, on the confines of Itanos and Praisos, I am inclined to regard the buildings at Aspra Kharakia as part of this celebrated temple.

Of special importance are the objects of Eteocretan art, which I collected on my journeys in this district. They consist, for the most part, of very rude terracotta *figurini*, having, on the one hand, some characteristics of Mycenaean art, while on the other they are connected with Asiatic art, and with Hittite art in particular. This fact, together with historical and philological reasons, and also the peculiar forms of the ancient local names, has led me to the following ethnological conclusions with regard to the primitive inhabitants of Crete. The Cydonians, Eteocretans, and perhaps the Pelasgians, are three branches of an original pre-Hellenic race from Asia Minor, belonging to a group of pre-Aryan and pre-Semitic peoples: namely, those Aegeo-Asians, who were, as I believe, the depositaries of the so-called Mycenaean culture. They are the same peoples who appear in the history and monuments of Egypt under the various names of Pelesthā, Tursha, Kheta, Kepha, &c. Hence I am of opinion that the historico-biblical questions of the identification of Kaphtor with Kreta, and of the Philistines as being originally of this island, ought not to be hastily abandoned, in spite of the opposition of the predominant school, which holds that the Mycenaean culture was an Aryan and Hellenic product.

In the public collections already made in Candia, Rettimo, and Hierapetros by means of the local Syllogoi, to which Greek societies we owe the preservation of many monuments of ancient art, I found materials of considerable importance, which I am now preparing for publication. Of these the principal is a collection of fragments of native pottery, which, while resembling the Mycenaean type, approaches much nearer the Theran period. These were found in a votive grotto on the southern slopes of Mount Ida, above the village of Kamares, where Dr. Taramelli afterwards made excavations and found further examples.—LUCIO MARIANI, in *Academy*, March 2.

PHAISTOS.—In the *Mittheil. Inst. Athen.* (1894, p. 290-293) K. Wernicke discusses once more the *Rhea-epigrams from Phaistos*. The oracular verses mean that the great mother prophesies only to those who have children, and only concerning the children. This explanation relieves grammatical and other difficulties.

EUROPE.

GREECE.

ARCHAIC FUNERARY STELE FROM SYMI.—Among the recent additions to the museum at Constantinople is an archaic funerary stele, which originally existed at Symi, and was photographed there in 1889 by members of the French School. Although broken in the middle and slightly damaged in the upper part, the monument is complete. The stele is slightly pyramidal in shape, like the Attic monuments of the same style. It is a marble block devoid of ornament, upon which is given the outline of a figure in profile standing upon a base upon which is carved a boar. There is no inscription and there are no remains of painting, a fact that is not surprising in view of the poor condition of the surface. The attitude of the figure is like that on the Attic steles. The figure is that of a young man, standing in profile, walking to the right; he is beardless and wears nothing on his head; with his left hand he leans on his lance; his drapery is very simple, and apparently consists of a mantle draping his chest and falling to his knee in folds, that are held by the right hand; the legs and feet are nude. The boar is often represented upon monuments of Ionian origin, on coins of Lykia, sarcophagi of Klazomenai, Ionian vases, Xanthos sculptures, etc. The technical process is interesting in its simplicity, which recalls the process of Boutades, who is fabled to have filled with clay an outline projected upon a wall. Here the sculptor drew upon the marble in a long sinuous line the profile of the figure, hollowed out the stone around it, and thus produced a flat image without modelling—a shadow as it were upon the marble. Not daring to carry very far his work, he indicated the details of the drapery merely by lines. The face is still without expression, the nose prominent and angular; the eye similar in its oblong shape to the crude essays of the first vase painters. The analogy of this sculpture with the earliest carved columns of the temple of Artemis at Ephesos, is sufficient to prove its Ionian origin. This stele is about contemporary with the column decorated by Croesus between 560-546; it marks the point of departure of an evolution of funerary sculpture which ends in the stele of Alxenor. During the forty or fifty years which separate these two works, we can place all the primitive steles of Greece proper, attaching them all to the Ionian school. Ionian influence seems to have reigned without exception from Attica to Akarnania, from Aktium to the borders of the Archipelago, and this is but a confirmation of the activity which made the Persians call Ionian artists to Persepolis.—*Bull. Corr. Hell.*, 1894, August-October.

PORTRAIT BUST OF KING MITHRADATES VI.—In the *Jahrbuch Arch. Inst.*, ix (1894), pp. 245–248 (pl. 8, cut), F. Winter publishes a marble head in the Louvre, which he shows is a portrait of Mithradates VI, Eupator, or the Great, King of Pontus, the famous adversary of the Romans. The head wears a lion's mask as a helmet. The expression of the face is energetic, but not noble. The identification is made possible by coins of Mithradates. This bust has been exhibited in the Louvre since 1870, and marked as representing a Greek king as Herakles. No further identification has been proposed until Mr. Winter was struck by the analogy between it and the profile of Mithradates the Great, as it is given on the fine coins collected by Theodore Reinach. The resemblance to one of these coins struck at Pergamon, when Mithradates was about forty-five years old, is striking; but Mithradates is known to have had himself represented in the character of Dionysos, and was not expected to be portrayed in the garb of Herakles. M. Solomon Reinach, however, notes a fact which had escaped Mr. Winter in connection with the coins of Odessos, on which Mithradates is represented as Herakles. In the year 73 B. c., Marcus Lucullus, brother of the conqueror of Mithradates, being Praetor in Macedonia, took and pillaged a number of Greek cities on the coast of the Black Sea, and among them was Odessos. At the time of his triumph in Rome in 71 B. c., he exhibited a colossal statue of Apollon, which he had captured at Apollonia, and it may be conjectured that he brought from Odessos a statue of Mithradates as Herakles, the head of which is now in the Louvre.—*Chronique*, No. 8, 1895.

APHRODITE PSELILOUMENE.—W. Klein publishes a bronze statuette in Kassel, which he regards as a copy of the *Pseliούμενη* of *Praxiteles*. The nude Aphrodite stands with her weight on her left foot. Her hair is gathered in a braid behind and crowned with a stephane. She is using both hands to fasten a chain (not represented) about her neck.—*Jahrbuch Arch. Inst.*, ix (1894), pp. 248–50, pl. 9.

GROUP OF WRESTLERS.—W. Amelung shows that the head of the Niobid, Dütschke 253, does not belong to the group of wrestlers in Florence, as Gräff (*Jahrb.*, ix, p. 119 sqq.) thought. The heads of the wrestlers and of the Niobid are all replicas of one original. The wrestlers belong to a time after Lysippos, but before the rise of the Pergamene school.—*Archäol. Anzeiger* of the *Jahrbuch Arch. Inst.*, 1894, p. 192.

THE HERA OF GIRGENTI MODERN.—In the *Archäologischer Anzeiger*, 1894, pp. 193 sq., A. Fürtwangler publishes a photograph of the "Hera from Girgenti," inscribed, "Testa di Giunone. Scultura moderna. Roma." As the photograph with the inscription was bought

by P. Arndt before 1890 (probably 1888), and the photographer probably had no knowledge of Fürtwangler's remarks in the *Arch. Zeitung*, 1885, it seems likely that he knew something of the modern origin of the head.

THE SIDON SARCOPHAGI AND THEIR HISTORIC CONNECTIONS. — F. Studniczka writes, in the *Jahrbuch, On the Foundations of the Historical Interpretation of the Sidonian Sarcophagi*. The eighteen sarcophagi discovered in 1887 fall into two classes, anthropoid sarcophagi and Greek sarcophagi with gables. Each of these classes falls into two subdivisions. The earliest sarcophagi are those imported from Egypt, ascribed by Studniczka to the VI century B. C., then the Greek anthropoid sarcophagi of the first half of the V century, next Greek sarcophagi with gables, but retaining the anthropoid shape of the interior. To this division the "satrap sarcophagus" belongs. The fourth subdivision retains no trace of the anthropoid shape. The "Lycian" sarcophagus dates from about 400 B. C., the sarcophagus of the mourners from about the middle of the IV century, the Alexander sarcophagus from near the end of that century. The sarcophagi were placed in the chamber where they were found in the order of their manufacture, and there is no reason for assuming that they were originally intended for other than Sidonian owners. The position of the chambers, close behind and under the tomb of Tabnit, and the diadem of the corpse in one sarcophagus (No. 17) shows that the sarcophagi belonged to members of the royal family of Sidon. The sarcophagi belong to five generations. The form of the sarcophagus of the mourners is derived from the canopy used in prothesis. The mourners represent the wives of the deceased. Several kings of Sidon are known. The Tetranmestos in Xerxes' army may be the head of the first generation here represented (sarcophagus No. 3). The Sidonian ruler who joined the fleet under Konon before the battle of Knidos in 396, may have laid in the Lycian sarcophagus; the sarcophagus of the mourners may have belonged to Straton I., and the Alexander sarcophagus is allotted to Abdalonymos, who was set upon the throne by Alexander after the battle of Issos, B. C. 332. He owed this elevation to Hephaistion, whose likeness appears in one of the reliefs. Besides the battle of Issos, the reliefs show hunting exploits of Abdalonymos and his warlike deeds after the death of Alexander. — *Jahrbuch. Arch. Inst.*, IX (1894), pp. 204-244, w. plate and 13 cuts.

APOLLON AGYIEUS BY MYS. — In the *Mith. Arch. Inst. Athen.* (1894, pp. 340-345), J. Six writes of the *The Agyieus of Mys* (seven figures). A conical stone in Corfu (Brugemann, *Indogermanische Forschungen*, 1893, pl. 1, pp. 87-89) bears the archaic inscription Μῆς με λίγαρο.

The stone is explained as a rude idol of Apollon Agyieus, and is compared with two similar stones in Pompeii.

SIGNATURES OF THE SCULPTOR EUTYCHIDES.—When Loewy published his inscriptions of artists the signatures of Eutychides numbered six. Since that time the excavations of Homolle and Fougères have brought several others to light: 1. The dedication in honor of Theodora, daughter of Krates of Teos, published in the *Bull. Corr. Hell.*, 1888, p. 260. 2. The fragments of a base of a statue found in 1885 with the inscription: . . . νος καὶ Σαρ[απίων . . . 'Αθη]ναῖοι Δωσίθε[ον . . . Μα | ρ]αθώνιον 'Απόλ[λωνι, 'Αρτέμιδι] Δητοῖ.

Εὐτ[υχίδης] . . . ἐποί[ει].

3. Two fragments of a circular base in white marble:

'Απόλλωνι 'Αρ[τέμιδι] Δητοῖ Δι[ὸν]υχίδης ἐποί[ει].

The period at which the artist lived can be more clearly determined by these inscriptions than has hitherto been done. The date of two of these works is indicated by the priesthood of Dionysios Spheltios, 119-8, and by the magistracy of Aristion in 98-7. Another is dated by the name of an archon, probably of one dating from 105-4.

It will thus be seen that Eutychides is the immediate contemporary of Hephaistion. As we find the artists Boethos and Theodosios, Dionysodoros, Moschion, Adamas, Demonstratos, and finally the very fruitful Agasias, all working at the same time, some idea may be gained of the wealth of Delos and the intensity of artistic production in this island at the close of the 11 century.—*Bull. Corr. Hell.*, August to October, 1894.

THE ERIPHYLE BY POLYGNOTOS.—In the *Mith. Arch. Inst. Athen.*, 1894, pp. 335-339, J. Six discusses the *Eriphyle of Polygnotos* (cut). A bronze statuette in Athens (χαλκᾶ 400, pub. in Dumont, *Céramiques de la Grèce propre* II, pl. 35, p. 249) compared with Pausanias x, 29, 7, shows how Eriphyle was represented with her hand under her garment. Paus. x, 30, 6, describes Orpheus as touching some twigs. This is brought into connection with the golden bough, Verg. *Aen.*, VI, 407, which is *longo post tempore visum*, because Orpheus first took it to the lower world.

CHORICIUS OF GAZA AND GREEK SCULPTURES.—In the *Jahrbuch Arch. Inst.* (vol. IX, pp. 167-190), R. Förster publishes with introduction and critical apparatus the Greek text of *The Praxiteles of Choricus of Gaza*. In this rhetorical composition the author supposes that in Sparta at some time all the girls were ill-favored. The oracle declares that this sad state of things will cease if Aphrodite be appeased by a statue. Praxiteles receives an order for the statue, but makes it a likeness of Phryne. The Spartans hesitate about accepting it, and in an assembly a speech is delivered against it. The speech is inter-

esting as a specimen of late rhetoric, and as showing the interest in art which existed at Gaza. Incidentally the statue of Zeus is mentioned as existing at the time of the writer. Several other famous works of art are mentioned, and some interesting examples occur of art criticism about A. D. 500.

ENGRAVED GEMS WITH ARTISTS' NAMES.—In an article in the *Revue Archéologique* (Nov.-Dec., 1894), M. Reinach studies an important class of ancient cut gems, those which bear the names of artists. He calls attention to the fact that this study has been much neglected even since the learned articles by Furtwängler in the *Jahrbuch* for 1888 and 1889. Reinach, through the study of documents unknown to Furtwängler, is able to add to and to rectify the history of a number of these famous gems and to reëstablish in a number of cases their reputation for authenticity. He shows that the cameo signed by Athenion belonged to the Orsini collection as early as the xv century; that the intaglio of Apollonios belonged to the same collection, after being in the hands of a collector named Tigrini; to the same collection belong the youthful Herakles cut by Gnaïos, and the cornelian (head of Augustus), as well as the amethyst by Dioskorides, carved with a head which Reinach insists against Furtwängler in regarding as a probable portrait of Mæcenas. The difficulty in regard to the cameo of Epitynchainos is cleared up. The authenticity of the artists' names on the gems signed by Mykonos and Pharnakes, also from the Orsini collection, is affirmed. The famous intaglio signed Polykleitos, and representing Diomedes with the Palladium, the authenticity of which has been disputed by Brunn, Koehler, and Babelon, is shown by texts to be good beyond a doubt, and to have been very famous in the xv century. M. Reinach gives details in regard to the gem signed by Onesimos, showing that this is the only case in which a forger has made a complete confession. The forger in this case was a well-known antiquarian named Dubois, and the affair made quite a stir among rival archaeologists.

MUMMY MASKS AND BUSTS.—In the *Archæologischer Anzeiger*, 1894, pp. 178-179 (2 cuts), K. Masner writes of *Mummy-masks and -busts from Upper Egypt*, his remarks being based on a collection of fifty such masks and busts brought by Mr. Theodor Graf from Egypt to Vienna. The earliest of these masks resemble their Egyptian prototypes, though the faces are neither Egyptian nor Greek in type. The second group becomes more and more Greek and takes on more characteristics of portraiture. In the third group the masks become busts, the head being raised and bent forward. At the same time the faces become more evidently portraits.

BURLESQUE VASE PAINTING.—In the *Mith. Arch. Athen.* (1894, pp. 346–350), A. Koerte publishes (cut) *A Boiotian Vase with Burlesque Representation*. It is in the collection of the Greek Archæological Society at Athens, No. 5815. It is a Krater with (yellowish) red figures. In the middle of the front is a large mortar. At each side is a man holding with one hand his pestle over the mortar. Both men have turned their backs to the mortar, and each is busy scaring off a large goose with his other hand. The men wear masks and wreaths, padded tunics making them look fat, and one wears a phallos. The costume is like that of the Phlyakes of Lower Italy and the terracottas of early Attic comedians. The painter is strongly influenced by Attic art. Other Boiotian vases from Kabirion show no such influence, but represent local sprites masquerading as gods and heroes. These sprites belong to the circle of Dionysos. The vase here published shows how such servants of Dionysos appeared on the Boiotian stage.

THE KYPRIA AND THE TROJAN WAR.—In the *Jahrbuch* (1894, pp. 251–254, two cuts), W. Klein discusses *The Introductory Scene of the Kypria* and the vases *Wiener Vorlegeblätter*, A. 9, E. 11, A. 11, 1, and A. 10, 2. The Trojan war is regarded as the mythical prototype of the Persian war. Athena appears as the patroness of Hellas, Aphrodite as that of Asia.

ARCHÆOLOGICAL SOCIETY IN BERLIN.—In the *Archæologischer Anzeiger* (1894, pp. 180–188) is a report of the July meeting of the Archæological Society in Berlin. E. v. Stern spoke of *Excavations and Discoveries in the Greek Colonies of the Black Sea*, with special reference to early Attic vases. Curtius spoke of the *Central Group of the Frieze of the Parthenon*, explaining the cloth held by the priest as a carpet to be spread for the gods. Pomtow spoke of the *Latest Excavations at Delphi*. Hübner spoke of a *Roman Bell from Tarraco*, with inscription. Adler explained a water-color view of Olympia, and Erman spoke of the danger threatening the temple at Philæ.

ARGOS.—EXCAVATIONS AT THE ARGIVE HERAION.—Dr. Waldstein arrived in Athens in March and began at once the excavations of the American School at the Argive Heraion. Sufficient funds have been secured this year to conduct the excavations on a large scale, and it is expected that they will be brought to a final close at the end of the season.

Dr. Waldstein wrote from Argos on March 28 the following note, published in the *N. Y. Nation* of April 25: "As I write I sit on the walls of the second temple of Hera (of the fifth century B. C.), while the men are massed on the slope below, to the south, where last year we found the first indications of a large building between twenty and

thirty feet beneath the foundation walls of the second temple. As we wish to lose no time this year, Mr. J. C. Hoppin (Harvard, '93), together with our architect, Mr. E. L. Tilton, of New York city, and Mr. T. H. Heermance (Yale, '93), began excavating a week ago, and carried on the work very successfully before my arrival here. The building below the south slope of the second temple promises to be one of the finest of the eleven buildings we have already discovered on this most favorable site. Of the north wall, which is of the best Greek masonry, four courses are standing. We have already followed it up for more than a hundred feet, and have not yet come to the end. The pillar bases in the center are all *in situ*. On one of these last year a drum of the column was still standing, and we have since discovered two others. Here Mr. Hoppin found some well-preserved large fragments of the metopes from the second temple, together with two heads in excellent preservation, one of which (a warrior with a helmet) fits the neck of a fragment of a metope with the greater part of the torso. If our good fortune continues, we shall be able to present fine specimens of metopes of this temple, which is second only to the Parthenon in artistic importance. The grant of the Archaeological Institute and (above all) the liberality of Mrs. J. W. Clark, of Pomfret, Conn., enables us to carry this season's work to a termination without the worries of cramped means."

ATHENS.—GERMAN EXCAVATIONS ON THE WEST SLOPE OF THE AKROPOLIS.—The German Archaeological Institute commenced in the autumn a series of diggings on the west slope of the Akropolis, between the Areopagus and Pnyx.

The *Ἀτλαντίς* of New York, for Dec. 8, 1894, states that in these excavations part of a torso of Aphrodite and a headless statuette of an ephēbos have been found. Both are of good workmanship.

The *Ἀτλαντίς* of Jan. 26 states that in the excavations a well was found the mouth of which was closed with a slab. On the slab was a relief representing a quadriga. There was also found a fragmentary pithos with inscription as yet not legible.

FRAGMENTS OF PARTHENON METOPES.—In the *Ἐφημερίς Ἀρχαιολογική* (1894, pp. 187–8, pl. 10, 11), K. D. Mylonas publishes *Fragments of Metopes from the south side of the Parthenon*. The fragments belong to metopes 11, 17, 21 and 23 (Michaelis), hitherto known only from Carrey's drawings. Their connection with the metopes was discovered by Prof. W. Malberg, of Dorpat, an article by whom is expected.

RELIEFS FROM THE ILISSOS.—In the *Ἐφημερίς Ἀρχαιολογική* (1894, pp. 133–140), A. N. Skias publishes five *Reliefs from the Bed of the Ilissos* (cut; pls. 7, 8). They were found near the so-called Kallirrhōē. The first represents a bearded male figure seated by an altar built of small

stones. His left hand holds a staff. His right hand held perhaps a cup or bowl. His legs, back and left shoulder are draped. At the other side of the altar stand two draped females. The fragmentary inscription is conjecturally read: $\delta \delta \epsilon \iota \nu \alpha \alpha \nu \epsilon \theta \eta \kappa \epsilon \nu \text{ Na}[\omega \Delta \epsilon \iota]$. Zeus Naïos may be identical with Zeus Meilichios. In the second relief, as in the first, the left side is occupied by a seated draped bearded male. Here his seat is a large bearded face with inscription *Acheloios*. Behind the seated figure is a standing person holding a horn of Amaltheia. Of this person little remains. The centre of the relief is occupied by Hermes wearing a tunic. In one hand he holds his wand, in the other an oinochoë, perhaps to pour into a cup held by the seated figure. At the right of the relief is Herakles clad in the lion's skin, holding his club in his left hand and some round object in his right. The seated figure is probably Zeus. This relief is of Macedonian times, and is better preserved than the first, which is ascribed to the v century B. C. The third relief is ill preserved. Five figures move toward the right; first a draped male, then a draped female (Demeter?) bearing a torch, then Athena, next Nike, and lastly a male torch-bearer. This relief formed part of a larger composition. The two remaining reliefs are on two sides of the same block. Both are badly injured. One represents two hoplites in combat, the other a reclining figure holding his right knee with his right hand. Before him are remains of an upright draped figure.

INSCRIPTIONS.—In the *Mith. d. k. d. Arch. Inst. Athen.*, 1894 (xix), pp. 401–402, L. Pollak publishes an *Inscription from Athens*, consisting of a fragmentary list of names—perhaps a list of Ephebi—of about the end of the II century after Christ.

MEETING OF THE GERMAN INSTITUTE.—The *'Ατλαντίς* (New York) of Feb. 23 gives a brief summary of the papers read at the last preceding meeting of the German Archæological Institute at Athens. Dörpfeld spoke on the recent excavations and the Enneakrunos, Wiegand on inscriptions found near the Asklepieion, Wolters on the tomb of Sophokles.

DELOS.—The latest excavations under the direction of M. Couve were concentrated upon the largest and richest of the private houses. They all dated from about the same period—the I century n. c. All of them have open courts and show that the description of the Greek houses given by the Vitruvius is not as fantastic as has been supposed. The most remarkable part of these houses is their internal decoration. Beside some charming decorative painting on stucco, there have been found capitals formed of two coupled lion-heads and two bull's-heads; an archaistic relief with a procession of divinities; mutilated heads, showing the influence of sculptors of the IV

century; Roman heads in much better preservation; and finally, the finest piece is a replica of the Diadumenos of Polykleitos, in admirable preservation, much finer than that of Vaison.—*Revue Arch.*, Nov.-Dec., 1894.

ANTIQUITIES TAKEN TO ATHENS.—The *Ἀτλαντίς* (New York) for Dec. 8, 1894, mentions a wall painting from Delos now in the Central Museum at Athens. The painting is very well preserved. With the painting there were brought to Athens some small female heads or masks intended for wall ornaments and some small bases for the same purpose, the latter being used for the support of statuettes. All these objects are of Roman times.

DELPHI.—A NEW OFFICIAL GRANT.—The French Minister of Public Instruction, M. Poincaré, proposed to the Commission of the Budget, in February, a new credit for the excavations of Delphi on the Budget of 1895. The commission granted the sum of 150,000 francs.—*Chronique*, 1895, No. 6.

INSCRIPTIONS.—The relations of the sovereigns of Pergamon, Syria and Egypt to the sanctuary of Delphi are illustrated by a number of inscriptions discovered by the French during their excavations, and published in the August to the October number of the *Bulletin de Correspondance Hellénique* by M. Couve. These inscriptions show the homage still rendered by the kings and their subjects to the universally recognized moral authority of the sanctuary of Delphi, and on the other hand they show the gratitude of the Delphians for these marks of respect and these benefits conferred. The first inscription is a decree of the city of Delphi regarding privileges which King Sileukos of Syria has asked of Delphi and for the temple of Aphrodite Stratonikis. The decree declares that the sanctuary of the city shall be sacred and inviolable, and at the Pythian games the Theoroi praise King Sileukos. This inscription receives its most complete and exact commentary in the text of the famous treaty between Smyrna and Magnesia, already known. Historically this document is interesting as being a further proof of the liberal policy shown by the Smyrna kings toward the cities of Asia, in the hope of opposing the barrier to Egyptian occupation. M. Couve recalls that Antiochos II, father of Sileukos, was the first benefactor of Smyrna, and that his son merely followed his example. The amicable relations between Delphi and the Syrian kings remained the same under the reign of Antiochos III, as is shown by the two inscriptions published, which is a decree of Delphi in favor of the city of Antioch. It recognizes the sacred and inviolable character of the city of Antioch and of the domain of Zeus Chrysaoreus and of Apollon. It decrees colossal bronze statues both to the people of Antioch and to King Antiochos; these to be placed in

the temple of Apollon. The obscurity of this inscription, in its historic and chronological bearings, leads to a very long commentary. The city of Antioch here mentioned was one of the many cities of this name, and appears to have been situated not far from Stratonikeia. It has left no trace in history. The base of the statue of Antiochos mentioned in the decree has been found, and upon it is inscribed the name of the sculptor of the statue.

The relations of Delphi with Egypt are illustrated by the third inscription, which mentions King Ptolemy II, Philometor. It is a decree in honor of a well-known Egyptian named Seleukos, son of Bythys, who afterwards became governor of Cyprus. The fourth inscription, which relates to Bithynia and to its King Nikomedes (91-74 B. C.), is of special interest, as it mentions detailed facts relating to the organization of the temple. It relates that King Nikomedes and Queen Laodike had favorably received two ambassadors sent from Delphi and had returned certain slaves which were demanded for the use of the sanctuary. In consequence the city of Delphi decrees to crown the king and queen, and to erect to them bronze statues in the sanctuary of Apollon. It is probable that the thirty slaves here mentioned, who filled subordinate offices in the service of the temple, had been kidnapped and carried away to Bithynia. We learn from the inscription that the slaves were ordered to perform the following services: Five to guard the sacred sheep; five for the sacred goats; four apparently for large cattle, and four for the sacred mares, while two or three were set aside for carpentry work; one as a baker; one as a cook; one as a guard of the palaestra, and four or five as domestics.

The article closes with several decrees of proxeny relating to persons, natives of the eastern basin of the Mediterranean, outside of Greece proper.

RECENT EXCAVATIONS.—At a recent meeting of the *Académie des Inscriptions*, M. Homolle communicated the latest results of the French excavations at Delphi. Some more pieces of poetry have been found in the Treasury of the Athenians. One of these, now in eleven fragments, contains musical notation—this time not for the voice, but for an instrument. The words can be restored with tolerable certainty; but the notes are difficult to read because of their great resemblance to one another. The subject of the poem is the birth of Apollon at Delos, his coming to Delphi, and his victory over the serpent with the help of Dionysos. It can be assigned to the II century B. C., by a prayer for Athens and the Romans, with which it concludes. A second Pæan has also been found, which is dated to about the year 340 B. C., by the character of the writing and by the names of the archons mentioned. The poet was a native of Scarphaia, in Lokris;

but his name is lost. Another interesting discovery is that of a sculptured figure with an inscription on the shield which was evidently the name of the artist. Unfortunately all that can now be deciphered is the first four letters of his patronymic, KAAA; but the form of the A shows that he was an Argive. The other recent finds include: metrical inscriptions of some length, mentioning works of art dedicated in honor of historical personages; some accounts of the iv century; a decree in favor of Kotys, King of Thrace; several statues of Hellenistic and Roman times; four archaic statues of the same type as the Korai of the Akropolis; fragments of interesting bronzes with *repoussé* ornament, and a Corinthian helmet in perfect preservation.—*Academy*, Nov. 10, 1894; *Revue Arch.*, Oct.-Dec., 1894.

SCULPTURES.—M. Homolle publishes three articles on the discoveries at Delphi in the *Gazette des Beaux-Arts* (December, 1894, and March and April, 1895). They are devoted almost entirely to sculpture. In the first article, after a few remarks on Mycenaean and archaic Oriental antiquities, he takes up in detail the archaic sculptures: (1) An archaic statue of Apollon, which he dates from about 580 B. C.; (2) sculptures of the treasury of Sikyon, which he dates from the same period; (3) and (4) two works of the schools of the islands almost as ancient as the preceding, the first being a sphinx from Naxos and the second a winged Victory of the school of Arhermos of Chios. These four works show the Greek school disengaged from Oriental forms and ideas. This progress is emphasized in the frieze of the treasury of the Syphnians, which belongs to the close of the vi century. After some cursory remarks on the treasury of the Athenians, and mentioning that there seemed to be no works found belonging to the v century, B. C., M. Homolle describes a charming group of the iv century, representing three dancing girls around a pier, robed in delicate, almost transparent drapery, arranged in fine and numerous folds. Passing rapidly over some later works, he closes with one of the most recent, but almost one of the most perfect, pieces of sculpture found during the excavations—the statue of Antinous, which is perhaps the most beautiful of all the images of the favorite of Adrian.

The second article contains remarks on the historical importance of some of the figured monuments, and concerns itself with the effect upon our judgment in regard to archaic Greek sculpture of our knowledge that the treasury of the Athenians dates from 490–480. He shows how a number of the sculptures of the Akropolis, which have been dated between 500–510, must now be placed in the same decade—that is, 490–480. He shows also that the painting of vases of the severe style, which have lately been given a rather exaggerated antiquity, should be dated from about 480; that the sculptures of

Ægina cannot belong to the close of the VI century, but must be dated nearer 480 than 490; and that the gables of Olympia cannot possibly, as Mr. Kalkmann thinks, belong to the beginning of the V century.

M. Homolle's third and final article treats of the "Apollon" figures of the treasuries of Sikyon and Siphnos and in general of the Argive-Sikyonian School of Sculpture. What follows is a synopsis.

Statues of Kleobis and Biton.—"The Argives," says Herodotos, "had carved statues of Kleobis and Biton, whom they considered to be the best of men, and dedicated them at Delphi." M. Homolle identifies with these figures two statues of the so-called "Apollon" type, discovered close together to the west of the treasury of the Athenians. They are in fact twin statues to such a degree that the parts of one could be completed from the cast of the other. The similarity is more pronounced than that which would be naturally given by identity of school, and the muscular development supports the idea that they represent athletes; besides this one of these statues is signed by an Argive artist. Their date is about 580 B. C., and they are the first attempts at portraiture in Greek art. Being authentic works of the Argive school, their importance is unique. They are comparable in style to the most ancient metopes of the temple of Selinous, which are generally regarded as dating between 580-560.

The Treasury of Sikyon.—This treasury has metopes the sculptures of which also bear great similarity to the metopes of Selinous, showing the same canon of proportions and the same technical processes, though there is greater skill and greater care of execution shown in the treasury of Sikyon. M. Homolle calls attention to the obvious similarity, also, to the figures on the Corinthian vases. He assigns the beginning of the treasury to the brilliant reign of Kleisthenes of Sikyon (580-570).

Treasury of Siphnos.—Hardly half a century after come the sculptors of the treasury of Siphnos, already fully described in the JOURNAL. They were erected, as Herodotos states, before the Persian war, during the short period of a "boom," which struck Siphnos at the time of the working of its gold mines. The exact period is given by M. Homolle as from 525 to 510 B. C. The differences in the quality and style of different parts of the sculpture indicate a difference of age, but not one of any extent. Although there are great differences on the surface, the methods are found to be very much the same, and if certain figures seem rather modern for the VI century, they are the exceptions. In deciding upon the school to which these sculptures should be attributed, it was natural to turn to the Greek islands; the sculptures were carved in island marble. Prof. Furtwängler attributes the sculptures to the school of Paros, but M. Homolle turns to the

Peloponnesos and attaches them to the same school as the two preceding works, the two statues of "Apollon" and the metopes of Sikyon. In all these cases the elements of comparison are to be found in works that are known to belong to the Peloponnesian school. This theory is supported by an inscription upon one of the four compositions of the frieze, the gigantomachy—which is signed by the artist. The inscription is cut on the shield of one of the giants fighting Apollon and Dionysos. In the name of the artist occurs the telltale Argive Lambda.

M. Homolle concludes his article as follows: "The frieze of Siphnos is of Argive workmanship; it is hardly necessary to call attention to its importance, for it brings down to the close of the VI century the history of this school, the activity of which at the beginning of the same century is shown by the Apollos and metopes of the treasury of Sikyon. Of this school we knew nothing hitherto, except from texts which were both rare and vague; the material for it consisted of monuments of uncertain provenience and hypothetical attribution. Henceforth we are enabled to study its monuments in hand; we can understand its spirit, define its character and follow its evolutions. The art of the Peloponnesos now takes shape before our eyes and the consequence of this fact can be imagined when we realize that it is one of the earliest schools of Greece, one of the most original and one of the most faithful to its traditions. It radiates over Southern Italy and influences at a decisive moment the art of Attica."

This article is illustrated by: (1) metopes of the treasury of Sikyon, which represents the return of Idas and the Dioskouroi bringing their booty back from Messenia; (2) three figures from the assembly of the gods, the gigantomachy, and the combat of Menelaos and Hektor from the treasury of Siphnos.

ELEUSIS.—INSCRIPTIONS.—In the *Ἐφημερίς Ἀρχαιολογική* (1894, pp. 161–186), A. N. Skias publishes thirty-four *Inscriptions from Eleusis*. Most of these are dedications, many of them fragmentary. In 21 the artist's name, Ἀγαθοκλῆς Κηφισιεύς, and in 22 Σώτας appears. No. 5 appears to be a record of some building, Nos. 7 and 8 fragments of an account. No. 14 consists of eight fragments, one of considerable size, and appears to contain rules concerning the treatment of temple property.

EPIDAUROS.—THE STADION AND A STATUE BY THRASYMEDES.—The *Ἀτλαντὶς* (New York) of Dec. 8, 1894, states that the stadion at Epidauros has been excavated. In shape it was like an amphitheatre, with marble seats. The ἀφούσις or starting-stall is preserved, as is also the goal. The base of a statue was found, which the *Ἀτλαντὶς* of Dec. 15 says was by Thrasymedes, the artist of the chryselephantine statue of Asklepios and other sculptures at Epidauros.

ERETRIA.—AMERICAN EXCAVATIONS.—In a coming number of the JOURNAL we expect to publish an article by Professor Richardson on the Temple of Dionysos, which he discovered at Eretria, and another by Professor Capps on the Theatre at Eretria, especially the *παροδοί*.

In the meanwhile we here reproduce a letter written by Mr. Capps for the *Nation*, referring also to part of an early report by Professor Richardson published in this JOURNAL, 1894, No. 2, pp. 308-9:

"The short but successful campaign of excavation conducted by the American School at Eretria, during the last three weeks in May, deserves mention in the columns of the *Nation*, not only on account of the actual results obtained, but also to enforce the moral recently laid down by Dr. Robinson in your columns, that a promising site should not be abandoned until everything has been brought to light that may prove valuable to the historian, philologist or archæologist. In the springs of 1891 and 1892 the School had conducted excavations on this site, especially in the theatre, with gratifying results. The field was so promising and so important for Greek history that the director, Prof. Richardson, wisely decided again to undertake excavations there. Since the available funds were limited, he determined to strike for certain definite results, viz., (1) to learn whether the peculiar location of the theatre was to be accounted for by the presence of a sanctuary of Dionysos in its immediate vicinity; (2) whether pre-Persian remains were to be found on the Akropolis; (3) to determine the site of the famous temple of Artemis Amarysia; (4) to lay bare the main street leading to the Akropolis; and (5) to open the large tumulus east of the city. This programme was carried out with the following results.

"The core of the tumulus was formed by a massive stone tower, of which three sides had fallen. No traces of a grave were found. Tentative diggings on the south slope of Kotronis, the site generally selected by topographers for the temple of Artemis, showed incontestably that no temple had ever stood there. Thus one unknown quantity is eliminated from the problem that the discoverer of this temple will have to solve. A trench (fifty feet long and down to the solid rock) that was dug on top of the Akropolis revealed no pre-Persian remains.

"So much for negative results. The less speculative and more serious digging, employing from forty-five to seventy-five men, was done between the theatre and the present village. The first and, as it proved, the most important discovery was made by the men working under the direction of Prof. Phillips, of Marietta. They were searching for the temple of Dionysos, and by the night of the first day had found the foundation of the cella wall. Three courses of the founda-

tions stand in good preservation. Quantities of charred wood and of cinders found inside the temple, and a hard thick layer of calcinated poros on the north and northeast sides, give evidence of how the temple was destroyed, and explain the absence of architectural and sculptural remains in the débris. Only one small marble head of Aphrodite was found. The large massive rectangular structure uncovered in the excavations of 1891, lying east of the temple and south of the theatre, was now seen to be the altar of the god. Nowhere in Greece can one see the group of three structures that belonged to the well-organized worship of Dionysos—temple, altar and theatre—so well preserved as here.

“Unfortunately, the other excavations had to be left unfinished. A long stretch of the ancient street, lined with private houses, was uncovered, but much remains to be done. Doubtless one might find here important data for the construction of the Greek house, for the foundation walls seem to be preserved everywhere. It is especially to be regretted that the work on the theatre could not be finished. This theatre, now famous in the history of the stage controversy, was partly excavated most opportunely in 1891, and at once furnished much aid and comfort to the advocates of both sides of the question. The stage buildings twelve feet above the level of the orchestra, on the strength of which Mr. Gardner contends that the Greek theatre had a high stage; the tunnel leading to the centre of the orchestra, which Dr. Dörpfeld believes to be distinctly in favor of the opposite view; the vaulted passage under the scena, which neither Dörpfeld nor Gardner has explained satisfactorily—these are some of the peculiarities of this theatre about which controversy rages. It is clear that if an answer to these problems is to be found, it must come from the building itself, for excavation has already shown that at least the ground-plan of the structure can be recovered.

“Something was done this year. The foundations of the west part of the scene buildings were uncovered, and a long line of column bases on which once stood choragic inscriptions and tripod columns. The outer wall of the west parodos was excavated throughout its whole length, and the fact was established that this parados, unlike the other, ascended from the level of the orchestra at a very steep grade. It seems at least probable that this parados was practically closed to the spectators, and that herein we have an explanation of the vaulted passage.

“Much remains to be done on the theatre, and must be done by the Americans if they wish to be looked upon by archaeologists as thoroughly competent and conscientious excavators. Dr. Robinson said a good word to this effect about the excavations at the Heraion;

it applies also to Eretria. Dr. Dörpfeld takes his large company of scholars of all nations each year to Eretria to see this theatre, and also to Megalopolis. I can testify that the clean work of the English School contrasted strongly with that of the American, and was noticed and commented on by all. A few years ago we had a first claim on the thousands of tombs, rich in archaeological material, some of which Dr. Waldstein opened with marked success. Now the enterprising Greek Archaeological Society has undertaken this work on its own account, and a unique opportunity for archaeological discovery has passed from our hands. But there is plenty of work left to be done in Eretria. The whole site is teeming with ruins a few feet under the surface. It is earnestly to be hoped that the American School will be able not only to finish the work at Argos, but to continue that at Eretria, so as to leave the latter site as creditable a monument to its archaeological activity as the former bids fair to be.

Athens, July 15, 1894.

EDWARD CAPPS."

KATANDRITI (NEAR MARATHON).—MYCENÆAN TOMBS.—The *'Ατλαντίς* (New York) for Dec. 8, 1894, states that at Katandriti, near Marathon, ten early tombs have been found containing vases of Mycenæan style, rings, etc., of gold, and pithoi containing human remains.

KOPAIΣ.—**EXCAVATIONS AT GHA.**—**MYCENÆAN PALACE.**—In the three preceding numbers of the JOURNAL we have noticed the excavations about the lake of Kopais. Since then we have received the number of the *Bulletin de Correspondance Hellénique*, in which A. de Ridder gives a full account of the excavations upon the island of Gha. This island has the form of an irregular triangle, or rather that of a pear, extending from east to west, about three kilometers in circumference, and with a superficial area of about two hundred thousand square meters. From every side the ground slopes down, and in certain directions, especially at the north, very abruptly; the lowest portion is toward the east; the highest toward the north, where the palace is situated. On account of its rocky character the greater part of the island is uninhabitable; even where the buildings were situated the earth is rarely as much as a metre in thickness. It was easy with the materials which the ground afforded to compass the island with heavy walls; thus when the Minyans thought it necessary to fortify the island, they surrounded it with a rampart nearly six metres in thickness. There was no occasion for them to call upon the architects from Tiryns. Immense dykes and a series of fortified posts, analogous to the system of defence at Mykenai, bear witness to-day to their skill as architects. The rampart bears a strong resemblance to the walls of Tiryns in the homogeneity of its construction, the similarity and frequency of the abutments, in the size and material used, and

even in the manner in which these immense blocks were fashioned. The island, much larger than the akropoli of Tiryns and Mykenai, had a large number of gates. Strangely enough, the eastern ramp leads to no opening in the wall; the same is the case for the dyke toward the northeast. Wherever communication seemed direct with the outside, there seems to have been an evident intention of avoiding placing a gate; they wished to oblige the assailant to pass as far as possible along the ramparts. Of the four gates, the western leads toward the Kephissos and towards Kopaïs; the northern toward the Kephissos and the ravine of Kokkino; the two others toward the south and



FIG. X.—MYCENÆAN PALACE OF GHA.

southeast toward Akraiphnion. The northern gate measures 5m. 45 in width, and is protected by two towers each 5m. wide; this leads into a small court 6 m. deep and 8.45 m. wide. The southern gate is analogous to the gate of the lions at Mykenai. In each case there is a tower set obliquely to the line of the wall, thus forcing the assailant to leave his right side exposed, and to enter through a long corridor defended on both sides. The gates and walls are minor matters compared with the palace. Ross thought, in 1834, that there were no ruins of buildings, but three years later, in 1837, Ulrichs pointed out

the position of different buildings. Subsequent voyagers observed: (1) At the north a construction about 60 m. long and 10 broad; (2) at the west a church, which was utilized as a place of refuge by the Greeks during the War of Independence in 1821; and finally towards the south, some further ruins which they thought belonged to the Middle Ages. The proposed later origin of these structures was due to the presence of mortar and to plaster walls; doubtless also to the fact that the walls were slender in proportion to those of the ramparts. But since the same characters were found at Hissarlik, Tiryns and Mykenai, they may be taken as certain signs of early origin. The plan of the building shows that the palace was composed of two wings, united so as to form a right angle; one follows the general direction of the wall, and without counting the abutments, is 80.21 m. long; the second wing extends toward the interior of the island and is 72.65 m. long. The superficial area of the space inclosed is 1871 sq. m., which is entirely inclosed with walls, with the exception of one point toward the middle of the north wing, where was the necessary entrance. Along the entire length of the inner wall is a narrow corridor which serves as protection for the rooms beyond. Even this device seemed insufficient, since only two rooms opened upon the corridor, the others being still protected by a second corridor. Into several of the rooms one cannot enter without first having passed through an adjoining room. It will be seen from an inspection of the plan that the palace is divided into a series of distinct departments, three of these occurring in the northern wing and two in the southern. The superficial area of the rooms and corridors is very variable; the corridors average 2 m. in width. The largest rooms, as might be supposed, are those which are inaccessible except through an adjoining room. The area of the largest of these is 82.25 sq. m. At either end of the wing is found a tower. If we compare this plan with that of the palaces of Mykenai and Tiryns, we find points of difference as well as resemblance. To be sure the Mycenæan palaces ordinarily formed an irregular quadrilateral, but the conformation of the ground at Gha led to the arrangement of two wings at right angles to each other. As at Mykenai and Tiryns, there is a closer relation between the palace and rampart. Nowhere is this relation closer than in the northern wing of the palace at Gha, which overlooks not only the plain as far as Kopaïs, but the entire island and a large part of the lake. The internal division of the palace is that of an inclosure with a single entrance and with the principal rooms preceded by a vestibule or entrance-room and communicating with each other only by a narrow corridor. The plan is more simple in detail than at Tiryns; there are no staircases; there is but a single story, and no room has more than

a single vestibule; and, finally, the rooms themselves are less spacious. The agreement of the plan of the palace of Gha and that of Mycenæan palaces is found also in the mode of managing materials and in the ornamentation of the rooms. We will study first the character of the walls, then the door-sills and floors, the decoration of interior walls, the discharging canals, and finally the fragments of vases and metals found within the enclosure of the palace.

In the disposition of the walls, the management of the materials of the outer inclosing walls and the inner walls is different. In the case of the ramparts, the method is that called Cyclopean, consisting of the use of large irregular blocks arranged in almost horizontal lines. The insertion of little intercalary stones has almost completely disappeared, having been replaced by a clay mortar of which there are distinct traces. The blocks are of the largest which are found on the island; and the inner wall, in this respect, yields in nothing to the exterior wall. The height of the walls is variable. At the north, where it merges with that of the rampart, it reaches the height of 4.25 m.; nowhere is it less than 1.50 m. The interior inclosing wall is transitional between the preceding method and that of squared blocks. The blocks are considerably smaller, arranged in courses and united by clay mortar; their thickness varies from 2.10 m. to 1.20 m., but their height is uniform, being never over 50 m. The visible portions of these walls are carefully covered with a thick coating of plaster, which is still preserved in parts. At Tiryns we find walls of the same character; they have the same breadth, reach approximately the same height, are united by clay mortar and covered with plaster; the only difference is that the *antæ* of sandstone, which are nowhere lacking at Tiryns, are not found in our fortress. Corresponding to these heavy walls we find a substantial pavement. Upon a layer of juxtaposed stones was placed the pavement made of chalk mortar. It may be raised by the pick in irregular plaques of a yellowish white color, and when broken sends forth dust. To give the pavement more solidity, little pebbles are mixed with the chalk; on the other hand the pavement seems not to have been decorated. Almost everywhere traces of fire are apparent; the pliable plaques detached by the pick are often almost black. Sometimes dark stones penetrate the floor covering to a depth of 0.04 m., indicating a fire of some importance. In one of the vestibules eighteen large flags of bluish calcareous stone form the pavement, but this is exceptional. If we compare the pavements of Tiryns and Mykenai, we find the same kind of floor covering and successive layers, the same use of gravel mixed with chalk, the same trace of fire; and at Mykenai, if not at Tiryns, the same stone paving of the vestibule. Between the rooms thus paved there

are thirty-nine openings of variable width; in each of these is a sill made of a single block of a bluish conglomerate not used in the enclosing walls. The thickness of these sills is approximately the same, about .15 m., but the form is very irregular; they do not occupy the entire space between the two ends of the wall, although in breadth they surpass the thickness of the walls. That each of these sills was made for a door is proved by the four hinges of bronze found in different parts of the palace. Similar sills and similar hinges of bronze were found at Tiryns and Mykenai. Whether these rooms had any other decoration, any yellowish white plaster, is difficult to say; only one room and one vestibule preserved any fragments of frescoes; it is probable that the other rooms had merely plastered walls. This vestibule was decorated in a very rich style; it contained a continuous frieze of which it is impossible now to give a restoration, though the ornament included the Mycenaean dart, in which is inscribed a reddish spiral. Decoration of this character occurs neither at Mykenai nor at Tiryns; it appears to be a prototype of the geometric style of ornamentation found in Boiotia studied by Boehlau. The decoration of the room was of a more simple character, consisting of painted bands of different colors. Under two of the door-sills were found water conduits of pointed arch form; the inclination, at first very gentle, increases sharply, and the channel plunges into the ground. Their purpose seems to have been to prevent the rain from injuring the foundation of the walls. Similar water conduits were found at Mykenai and at Tiryns, the only difference being that at Tiryns the terminations occur within the dwelling rooms and are covered by flags of stone.

The metals at Gha are few and used for practical purposes, and not for ornament. We have seen the hinges of bronze, the only objects of this metal found on the island. Lead is found more frequently; it is always in the form of plaques, and appears to have been used for the purpose of attaching the door-jambs to the walls. At Mykenai, Tiryns and Hissarlik much use was made of lead; they made of it large jars to contain grain, but apparently did not employ it in construction. One of these plaques of lead shows traces of iron, but from this we cannot conclude that iron was in current use at this period. An ornamental purpose seems to have been served by the fragments of stucco found in the form of an engaged colonette. Sometimes the projecting portion is in sections, almost square, being simply rounded at the angles. Ordinarily it is in sections, a semi-circle, or, more exactly, the third portion of a circle. Finally, the fragments have been found in the form of pilasters with channelings. Anything like this style of ornamentation has never been found in any Mycenaean palace;

doubtless they preferred frescoes or other decoration. In fact, the only two rooms at Gha which are frescoed are not provided with these colonettes. In the frequent use of this type we see proof of hasty decoration and extreme simplicity. This use of stucco served to hide the uniformity of the walls. Fragments of vases found in the palace are few and without significance; they belong to two groups—cups and bowls. The former class are too common in Mycenaean pottery and in that of Boiotia to require more than mere mention. The bowls have a flat base, are wheel made, and occasionally recall examples found at Tiryns.

Another large building is found situated between the northern and southern gate. The walls are made in the same manner as the inclosing walls of the palace, but more roughly, more rudely, and without plastering. Within these walls there is but little architectural detail. This building is contemporary with the palace. We find here the same kind of pavement, the same plaques of lead, the same colonettes of stucco, the same forms of vases, made of the same earth, turned with the same inexperience, and decorated with the same simplicity. This apparently served the purpose of a soldiers' and servants' hall. Like the palace, it appears to have been built in haste, and to have been inhabited a comparatively short time. From the character of the decoration upon the vases, which approximates a transitional style, we infer that these buildings belonged to the end rather than to the beginning of the Mycenaean period.

In the neighborhood of Gha are found other constructions of the same style; at Orchomenos a tholos; between Orchomenos and Gha, three colossal dykes; and, finally, nearer still—on the heights of the Ptoion—a series of fortified posts. Of these constructions two were already famous in antiquity. The tholos passed as the Treasury of the Minyans, and the dykes were part of the work for drying up the lake undertaken by the Minyans. It is to this people that we consequently attribute the forts of the Ptoion and the constructions at Gha. The island formed for them a large fortified camp from which they could survey the plain and protect the dykes.

We are obliged to set aside the suggestion of Tsoundas, according to whom Mycenaean civilization was originated by lake dwellers, and that consequently the marshes of Kopais were selected, so that a city might be built there upon piles. It is quite possible that primitive villages of the lake were built upon the marshy ground, but these could have nothing in common with the advanced construction of the rampart and palace of Gha. Others, like Urlichs, have supposed it to be the ancient Kopai, or, like Curtius, the ancient Orchomenos. These hypotheses have long since been disposed of. More plausible

is the theory that Gha was one of the four towns engulfed by the waters of the lake. Without doubt the akropolis was never inundated, but it has been supposed that the lower town was engulfed; there is, however, nothing to prove that the island ever had a lower town which could be so engulfed; and if the fortifications at Gha are contemporary with the construction of the dykes, it is hardly probable that the waters would have so soon dashed them down and the palaces consequently abandoned. Only a war could have caused the burning and the untimely ruin of the establishment formed upon the island. Of these four legendary towns, three are fixed by tradition; the position of one only, that of Arne, remains uncertain. Two of these towns were ruled over by Athamas. Now, when we observe that Gha is situated in the Athamantian plain, we are disposed to see in this island, if not the centre, at least one of the citadels of Athamas. The island, linked in the closest manner with the fortunes of Orchomenos, was destroyed not by a cataclysm, but by the final assault which subjected the Minyans. Hastily built, it could not resist the attack and perished almost as soon as it was inhabited.

MARATHON (NEAR).—DISCOVERY AT KOUKOUNARI.—Prof. T. D. Seymour, Chairman of the Managing Committee of the American School at Athens, has received details of a discovery by a party from the School which had been excavating at the hamlet of Koukounari, on the slope of Pentelikos, some two or three miles from the field of Marathon, and about eighteen miles from Athens. Prof. R. B. Richardson of the School had charge of the excavations, which were suggested by finding two reliefs of the best period, and seeing some marble blocks built into the walls of a church and adjacent building.

During the first half hour of the work, which lasted several days, there was found a stone bearing an inscription in double columns lying face downward on the sill of a building older than a ruined church on the site of which the excavation was made. The whole left-hand side on the surface is gone. From its style of letters, the orthography, and the mention of an archon, its date can be put at about the middle of the iv century. Apparently it is a sacrificial calendar. From its mention of places a very close connection is established with the plain of Marathon. The number of deities it mentions is remarkable, and from one of the incomplete words upon it the inference is drawn that it stood perhaps on the site of the deme Hekale. The most reasonable construction makes the stone apply to the tetrapolis of the Marathonian neighborhood, a part of its inscription reading: "This sacrifice is offered the second year after the archonship of Euboulos by the inhabitants of the Tetrapolis." Divinities, animals and prices make up a large part of the inscription on the

stone, which Prof. Richardson will describe in the *Journal of Archaeology*.

There were also found in the excavation three fragments of reliefs, two of them showing a good period of art. One was part of a seated figure, the other the trunks of three standing ones. Beneath the site of the church, on the surface, were found unfluted columns and other remains of an older and much finer underlying church edifice.—*N. Y. Evening Post*, March 27.

At the moment of going to press we have received Professor Richardson's detailed paper, which confirms the great interest of this inscription. It will be issued in the next number.

MESSENIA.—To the *Mith. Arch. Inst. Athen.* (1894, pp. 351–367), E. Pernice contributes an article entitled *From Messenia*. Ross, *Reisen und Reiserouten* (pp. 2–4), mentions two inscribed stones that once marked the boundary of Lakonia and Messenia. Both were supposed to be destroyed. One has been found on the heights of Taygetos, half way between Sitsova and Kastania. The fragmentary inscription originally read, "Ὅρος Λακεδαιμόνι πρὸς Μεσσηνίῃν". It probably marked the boundary settled in A. D. 25. On high ground between the streams Stachteás and Sovoláka lies the village Jánitsa. Here are remains of very early walls. This is the site of the ancient Pheroi, not Kalamata, as has been supposed. The site is now too far from the sea, but the low land is of late formation. Two inscriptions are published, the first has appeared in *Bull. Corr. Hell.*, I, pp. 31, 32, the second is a fragmentary honorary decree. A sketch-map shows the position of Janitsa. Remains of a road from Pharai toward Sparta, south of the Langada pass, are described. This must be the road followed by Telemachos.

LAURION.—A. Kordellar, director of the Greek mining company at Laurion, writes of *Antiquities of Laurion*. He discusses the topography of Laurion and the ancient mining operations. The region nearest Sunion was occupied by wealthy people. Two inscriptions are published. The first belongs to the middle of the IV century B. C., and contains provisions for measuring and preserving an agora presented by one Leukios to the Sunians. The second reads: "Ἰανίβηλε ἀρχικαμινεὺτὰ χαῖρε". A square Hermes of Dionysos, with broken face, is described. P. Wolters adds some remarks and publishes a fragment of a rock-cut inscription.—*Mittheil. Athen.*, 1894, pp. 238–47.

OLYMPIA.—In the *Jahrbuch Arch. Inst.* (1894, pp. 88–114), K. Wernicke gives two chapters of *Olympian Contributions*. He discusses (1) the altars of Olympia, and (2) the history of the Heraion. The early altar of Zeus was near the Heraion. The great altar was erected originally in the V century B. C. Pausanias' account (v, 14 f.) of altars

and sacrifices at Olympia is trustworthy. The sacrifices were performed in two divisions, the first at the oldest and most important altars, and at some later ones in their neighborhood, these being all within the Altis, the second at the remaining altars, chiefly outside the Altis. The arrangement of Pausanias is topographical, following the course of the sacrificial procession. This is made clear by a plan. The great base in the Heraion cannot be the base of the cult-statues, owing to its dimensions. The Heraion was made into a sort of museum in preparation for the visit of the Emperor Nero, and in it were set up statues of his wife, Poppaea, and his mother, Agrippina, corresponding to Olympias and Eurydike. The extant portrait statue found in the Heraion represents Poppaea. The works of art in the Heraion were arranged in their historical order, the oldest next the cult-statues of Hera and Zeus. At the same time the side walls of the niches were removed. These niches may originally have been intended for the maidens who wove the sacred peplos. The arrangement of the statues is shown by a cut. A third chapter of *Olympian Contributions*, entitled *The Proedria and the Hellanodikeon*, is in the next number of the *Jahrbuch*, pp. 127-135. The proedria, or meeting-place of the Hellanodikai is found to be the southern wing of the building to the whole of which the name bouleuterion has hitherto been given. The bouleuterion was only the northern wing. The apse of each wing was an archive-chamber, and in the proedria a treasury. The Hellanodikeon, or dwelling of the Hellanodikai, was the so-called "Südostbau" until the time of Nero. Then that building was prepared for the imperial dwelling, and the Hellanodikai occupied rooms added for their use to the Theokoleon. There was, therefore, at the time of Pausanias no building called Hellanodikeon at Olympia.

A fourth chapter is contributed by Wernicke to the latest issue of the *Jahrbuch* (pp. 191-204). The passage Pausanias VI, 21, 2, and the remains of the *gymnasion* at Olympia are compared with Vitruvius, v 11 (two cuts). Vitruvius describes some particular example of a Greek gymnasium of Roman times. The gymnasium at Olympia is earlier and less elaborate, but corresponds so closely to Vitruvius, description that the various parts can be named. The *Hippodrome* at Olympia is described. The course was four stadia in length. This was passed over in the races six (not twelve) times. The starting stalls (*ἀφῶοις*) have the form of a ship's front of great size. The deck was supported by columns. On the deck was the sign showing when the race began, and here at the prow was the machinery for opening the stalls. The altars in the hippodrome all belonged to deities connected with the races.

KALAURIA—POROS.—TEMPLE OF POSEIDON.—The proposed excavation of the temple of Poseidon, on the island of Kalauria (mod. Poros), referred to in a previous issue, has taken place, and its results will be described in the German *Mittheilungen* (Athens). Dr. Sam. Wide, who had charge of the work, was assisted by another Swedish archæologist, Mr. Kjellberg.

The systematic destruction of everything above ground, which was carried on even until late years, left only the foundations to be uncovered, and the thin coating of earth made improbable the discovery of many antiquities. Considering these drawbacks, the excavations may be regarded as successful.

The temple rose on a stony plateau about 150 m. high in the pine woods of Poros. On the east side, facing Sounion and the open sea, there was found the temenos of the temple, with its peribolos wall having a length of 56 metres and a width of 28 metres. The wall consists of unworked blocks of dark limestone and of *poros* stone. There were two entrances to the enclosure, on the east and south sides, one of which was adorned with a propylæum. Both the temple, which is of Ionic style, and the peribolos, were built in the same age, viz., the VI century B. C.

[Another account speaks of it as Doric, not Ionic. "In the centre of this temenos were some fragments of the walls and pavement of a temple, doubtless a doric distyle *in antis* of the VI century. This is, without doubt, the temple of Poseidon, in which Demosthenes took refuge to die."]

Amongst the other constructions discovered was a stoa of polygonal stones, the pillars of which resemble somewhat the pillars of the Parthenon, and seem to belong to the second part of the V century B. C. Another stoa of later date is thought to have been built by Eumenes II. These stoas were on a second peribolos, built upon a large terrace, reached from the southern door of the peribolos wall of the temple. To these must be added a propylæum leading to the square before the temple; another stoa to the west of this propylæum; a building in form of a trapezium; and a courtyard surrounded by little rooms.

These smaller structures are to the west of the temple. Their use and character cannot yet be ascertained. It is conjectured that the two porticoes and their annexes served for the assemblies of the Amphiktion of the seven cities and formed the Bouleuterion.

Among the objects found inside the temenos are many fragments of *ex-votos*, of which the majority belong to the VI century and some to the cult of Poseidon. Among them are of special interest a cut

Island stone and a fragment of Mycenæan vase.—*Athenæum*, July 28, Sept. 8, 1894, Jan. 19, 1895; *Revue Arch.*, Oct.–Dec., 1894.

PRASIAI (ATTICA).—MYCENÆAN NECROPOLIS.—The *Ἀτλαντίς* (New York) for Dec. 8, 1894, states that at that time Mr. Staïs had examined twenty-two prehistoric tombs in the ancient deme of Prasiai. In these were found numerous vases with paintings differing from those hitherto known on Mycenæan vases. Some bronze and copper knives were also found.

A notice in the *Athenæum* of Dec. 8 says: The prehistoric necropolis of Prasiai is being excavated by the Athenian Archæological Society, and from the tombs that have already been opened more than two hundred vases have been obtained, together with two sword-blades and three rings, one of gold and two of silver. The vases have the usual Mycenæan form; but some of them are characterized by decorative designs not hitherto observed in works of art of that period.

RHODOS.—In the *Mittheil. Inst. Athen.* (1894, pp. 299–300), is a report, founded upon one of Dr. Stylianos Saridakis, concerning the rock-cut graves on the northern slope of the Akropolis of Rhodos. In these numerous specimens of pottery, terracottas and beads, besides bones, a gold wreath and a gilded bronze *κάλπη*. A stone apparently belonging to one of the graves is inscribed:

Ἀρχίνικος Πραϊοφώντος
Κυμοσαλεύς.

The date assigned is the III century B. C.

SAMOTHRAKE.—LIST OF MAGISTRATES.—In the *Mitth. Arch. Inst. Athen.* (1894, pp. 397–402), O. Kern publishes a new *List of Theoroi from Samothrake*, furnished him by N. B. Phardys. This list came originally from the same edifice as those treated by Bernsdorf, *Neue Unters. auf Samothrake* (1880), p. 96, sqq.

THEBES.—SCULPTURED BASE FROM THE AGORA.—The *Ἀτλαντίς* (New York) of Jan. 26, states that in the agora at Thebes a four-sided base had been found. The front has a relief representing a fox. The relief of the back represents a winged serpent with two-clawed feet. The work is ascribed to Roman times. This base originally stood upon another base.

THERA.—TESTAMENT OF EPIKTETA.—In the *Ἐφημερίς Ἀρχαιολογική* (1894, pp. 141–148), Th. Homolle writes on *The Date of the Testament of Epikteta*. Boeck (C. I. G., 2448) showed that this inscription belonged to Thera, and assigned it to the III or II century B. C. Ricci (*Mon. Antichi*, II, 1894) assigns it to the first quarter of the II century. Comparison with inscriptions found at Delos, three of which are here published, shows that the opinions of these scholars are correct, and fixes the

date between 210 and 195 B. C., on account of the occurrence of the same proper names in the inscriptions.

THESPIAI.—**FRAGMENTS OF A HELLENISTIC SARCOPHAGUS.**—During the course of the excavations of the French School at Thespiæ, in 1890, the fragments of a sarcophagus of unusual interest were found. They are now in the National Museum at Athens. The main subject of its decoration is the labors of Herakles. Three out of the four sides are occupied by episodes from his labors. The fourth and one of the main sides was probably occupied by two sphinxes walking towards each other. One of these sphinxes has been partially preserved; it has a lion's body and spread wings, and does not differ much from sphinxes found upon numerous sarcophagi. Five only of the labors of Herakles found place on this sarcophagus. On the main front is Herakles and the boar of Erymanthos, Herakles and Antaios, Herakles and the Amazon Hippolyta; on the left side is Herakles and Kerberos, and on the right Herakles and the Hydra. The reliefs are in extremely fragmentary condition. The sculptor is inspired in his compositions by models of the V and IV centuries B. C. The composition is in every case simple and classical, quite different from the confused compositions of the Roman period. The low relief, which is employed throughout, completes the proof that we have here not a work of Roman art, but one of the very few sarcophagi of Greek art, certainly not later than the Hellenistic period.—*Bull. Corr. Hell.*, August-October, 1894.

Sculpture by Euthykrates—In the *Jahrbuch Arch. Inst.* (1894, pp. 165-6), W. Klein writes on *The Thespiadae*. In Plin. N. H., 34, 7, the Bamberg MS. reads *itaque optime expressit* [Euthykrates] *Herculem Delphis et Alexandrum Thespi venatorem et proelium equestre, etc.* Other MSS. have *thespiadas* between *et* and *proelium*. Euthykrates seems, then, to have made a group of Muses also for Thespiæ.

BYZANTINE ART AND ANTIQUITIES.

BYZANTINE SEALS.—M. Schlumberger publishes in the *Revue des Études Grecques* (July-December, 1894), the third in his series of articles on inedited Byzantine seals, the former series having been published in the same review for 1889 and 1891. A reproduction is given of every seal. They vary in character and in period and represent every variety of ecclesiastical and civil dignitaries of the empire, such as patriarchs, bishops, metropolitans, archbishops, monasteries, emperors, members of the royal family, and such dignitaries as silentiaries, spatharii, logothetes, curopalates, turmarshs, strators, vestiarchs, etc.

BYZANTINE DOMINATION IN AFRICA.—M. Diehl publishes in the *Byzantinische Zeitschrift* (1895, No. 1) a paper entitled *Études sur l'histoire de la domination Byzantine en Afrique*. It deals with the relations between the Byzantine government and the native populations, and is a detached fragment from an extensive memoir, the manuscript of which has lately been crowned by the French Academy and which is soon to be published.

LEO AND ALEXANDER, EMPERORS OF BYZANTIUM.—Professor Lambros calls attention to a Byzantine inscription of the year 895 A. D. This inscription shows that in this year, the ninth after the death of Basil the Macedonian, Alexander still retained his full rights as co-emperor with his brother Leo. It is well known how Leo ignored his brother in all matters of government, and how Alexander was passive under the treatment. It had not yet been ascertained how long the name of Alexander was allowed to be coupled with that of his brother, but a second inscription here published would seem to show that the year 904 was the last in which Alexander's name appears with his brother's.—*Byzant. Zeitschrift*, 1895, No. 1.

BYZANTINE ILLUMINATIONS.—Mr. Kirpicnikov has an article in the *Byzantinische Zeitschrift* (1895, No. 1), in which he makes a careful study of two Byzantine illuminated manuscripts of the homilies for the festivals of the Virgin by the monk Jacob of Kokkinobaphos. One copy is in the National Library in Paris (No. 1208), the other is in the Vatican (No. 1162). They have attracted much attention since the time of Agincourt, having been illustrated notably by Kondakov, Bordier and Rohault de Fleury. The present article has for its object to correct the errors of Bordier and Kondakov. It is illustrated by a number of interesting cuts, which show the artistic beauty and interest of these illuminations. The corrections relate partly to the translation of the descriptive titles of the illuminations, partly to the identification of subjects and figures.

PRESERVATION OF THE GREEK RITE IN SOUTHERN ITALY AND BYZANTINE MONASTERIES.—M. Gay gives a list of the Greek Basilian monasteries in Calabria and the Terra d'Otranto which he has been able to gather from the *Collectorie*, or accounts of tax collectors of the kingdom of Naples charged with collecting the tithes for the Roman Church. In enumerating the ecclesiastics who have paid certain sums into their hands, the tax collectors name separately in several dioceses, "Clerici Latini" and the "Clerici Greci." They indicate places where they reside a "prothopapa," and name the clerks of such and such a "prothopapatus." Elsewhere monasteries are indicated expressly as belonging to the order of St. Basil—"Ordinis Sancti Basilii." The notes which are here utilized are taken from the ac-

count of the years 1326-28 for Calabria, and from those of the year 1373 for the Terra d'Otranto. Of course no complete list of Greek monasteries can be expected in such notes. For the list of monasteries that M. Gay has drawn up we refer to his paper.

CONSTANTINOPLE.—FOUNDATION OF A RUSSIAN ARCHÆOLOGICAL INSTITUTE OF BYZANTINE STUDIES.—The Russian government has decided upon the foundation of a Russian Archæological Institute in Constantinople. Its object will be to forward the scientific researches of Russian scholars in the realm of the antiquities and history of Greece, Asia Minor, and in fact the entire Byzantine field. The administration of this school is in charge of the Russian embassy. Its personnel will consist of a director, a secretary and a body of students. The government gives the school a yearly grant of 1200 rubles in gold. It is said that the director will be Th. Uspenskij, professor in the University of Odessa. The opening of the institute was to take place on January 15.—*Byzantinische Zeitschrift*, 1895, No. 1.

IMPERIAL MONOGRAMS IN ST. SERGIUS.—Mr. Swainson, joint author of the recent work on St. Sophia, has a note in the *Byzantinische Zeitschrift* (1895, No. 1) reproducing and explaining some monograms on the capitals of the church of St. Sergius. The capitals of some of the columns on both the ground and gynæceum level have sculptured monograms, and on the frieze of the lower border runs a long inscription which is given in Salzenberg's great work. The monograms are similar to those on the capitals of St. Sophia, which were deciphered by MM. Curtis and Aristarches.

Nos. 1-10 can be read "of Justinian;" they are similar to those in St. Sophia, to others on the capitals of St. Irene, etc. Nos. 11-12 bear the monogram "of Theodora." Nos. 13-21 bear the monogram "of the king," of which examples can be found on the capitals of St. Sophia. As the church of St. Sergius was probably built by Justinian before the death of his uncle, Justinian I, this may account for the absence of the title "Augusta," as applied to Theodora, which does occur on the monograms of St. Sophia, built when Justinian reigned supreme.

DAPHNION.—BYZANTINE MOSAICS.—In the *Ἐφημερίς Ἀρχαιολογική* (1894, pp. 149-162), G. Millet writes again of the *Mosaics of Daphnion* (see *JOURNAL*, IX, p. 575), and publishes one representing the birth of the Virgin (pl. 9). St. Anna reclines on a couch, the legs of which are nearly covered by a rich curtain. Behind her is a servant with a long-handled fan. Two other servants bring food—fruit and (apparently) eggs. In the foreground a nurse and a maid are bathing the new-born child. In the gold background is the inscription, ἡ γέννησις τῆς θεοτόκου, the last word abbreviated. The style resembles that of the crucifixion. Other representations of the birth of the Virgin are

discussed, and this mosaic is assigned to the first years of the xi century. It seems to show the influence of ancient works of art, and is remarkable among works of this period for its delicacy and grace.

DORYLAION.—In the *Mittheil. Arch. Inst. Athen.* (1894, pp. 301-334), Th. Preger and F. Noack write of the ancient *Dorylaion*. The ancient city lay on a hill near Eski-Schekir, by the river Tymbers (now Pursak), not, however, in the present village. The *thermae* were on the further (southern) side of the river. The later *Dorylaion*, founded by Manuel I, commenced in 1175, was on the site of the modern village by the Anatolian railway. Remains of the *thermae*, of a *stoa*, an arch and several other ancient buildings are visible. Sixteen inscriptions and five grave-reliefs from this region and one grave relief from Gediz (Phrygia Epiktetos) are published (six cuts). The inscriptions are of Roman times, chiefly honorary or sepulchral. Three are dedications to Ζεὺς Ποσειδῶν, one to Poseidon, one to the river-god Hermus. The gravestones represent doors or panels sometimes surmounted by gables. On the doors are reliefs representing the tools of the trade of the deceased—alabastra, keys, work-baskets, etc.

IKONION.—A BYZANTINE INSCRIPTION.—M. Cumont publishes a funerary inscription of Ikonion, which had already been imperfectly given in Sterrett (*An Epigraphical Journey through Asia Minor*). It shows that on November 1st, 1297, a certain Michael Komnenos was dead. He calls himself the son of John and the grandson of another John Komnenos. This funerary inscription shows not only that he was buried in 1297 at Ikonion, when this city was in the power of the Seldjuk Mohammedans, but that he also had taken the Mohammedan title of Emir. M. Cumont shows the interest that this inscription has, giving us a trace of one of the last members of the imperial Byzantine dynasty of Trebizond. He shows that this Michael was a son of a John, who was forced to become a monk, and was himself a son of John Axouchos, who was sovereign of Trebizond between 1235-1238, and whose grandfather was the Manuel Komnenos killed by Isaac Angelus, Emperor of Byzantium. The writer explains what seems to be peculiar in the residence of a Christian prince at a Mohammedan court, by showing that the Christian princes of Trebizond were allied by marriage to the Seldjuk Sultans, who were also their suzerains. It was therefore natural, when Michael's father was imprisoned in a cloister and he himself obliged to flee, he should have sought refuge with the ally and parent of his family, and should have been received with honor and given a Mohammedan title.

KIEF.—BYZANTINE TOMB.—There has recently been found at Kief the tomb of a woman which dates probably from the second half of the x century. The contents consist of two fibulas of gilt bronze in the form

of tortoise shells, a pair of silver earrings, a silver fibula, a necklace of beads of cornelian, rock crystal, glass, silver and amber, a cross and coins that originally hung from the necklace. These coins bear the name of Romanus I, Constantine X, Stephen and Constantine; they were cast between 928 and 944. The two fibulas of gilt bronze were certainly imported from Scandinavia, for they belong to a type of objects characteristic in Sweden and Denmark of the period of the Vikings. Only one other of this type had been found thus far at Kief, and this kind of decoration is found only in the countries into which the Northmen penetrated. The earrings, the silver fibula, the necklace beads and the small cross are decorations that are often found in the Slavic kurgans of the pagan period. This tomb, discovered on the hill upon which the Varangian askold and Dir, and afterwards Olaf and Igor established themselves, contains, therefore, archaeological objects produced by the three influences which united in the formation of Russia.—*Revue Arch.*, 1894.

ITALY.

MANTOVA.—ISABELLA D'ESTE AND THE DISCOVERY OF FRESCOS BY CORREGGIO.—Under the title *Isabella d'Este et les artistes de son temps*, that indefatigable and fascinating writer, Charles Yriarte attempts to reconstruct the personality of this famous princess, daughter of Hercules of Este, Duke of Ferrara and of Eleonora of Aragon. At sixteen she married the great condottiere, the generous and noble ruler, Giovanni Francesco Gonzaga Marquis of Mantua. Here she lived for half a century, and here she became one of the most discriminating, fervent and active patrons of the greatest Italian artists of her day. It is this side of her personality which Yriarte studies with a view to making clear her influence upon the development of Renaissance art. First come the portraits of her by Leonardo da Vinci, Cristoforo Romano, Titian, Giovanni Santi and Francia—of which the last two have disappeared. Then follows a description of the portraits of her husband, Giovanni Francesco Gonzaga, interwoven with interesting personal character sketches.—*Gazette des Beaux Arts*, Jan., 1895.

In a second article M. Yriarte studies the traces of Isabella of Este in the Castel Vecchio at Mantua. Isabella, after becoming Marchioness of Mantua, changed her dwelling three times, removing in every case the works of art and curiosity of which she was especially fond. During twenty years she lived in the Castel Vecchio. When her son became Marquis he gave her in exchange for her apartments in the annex to the old palace a vast apartment called Paradiso, especially constructed for her in the Reggia or modern palace, where she ended her days in 1539. But before taking up her abode in this

second apartment she remained for a while in the Corte vecchio of the Bonnacolsi Palace. Her apartment in the old palace was called by her the "Studiolo." For a long time it had been abandoned and practically unknown. In one of its rooms, the library, there remains in the hexagonal vault a charming decoration of cupids which has apparently escaped the attention of art critics. M. Yriarte recognizes in them a youthful work by Correggio, full of charm and softness. The style is so characteristic of the master that there seems to be no doubt in regard to the attribution. It is known that Correggio came to Mantua in 1512, at the age of eighteen, with his protector, Count Manfredi, Lord of Correggio. Here he studied the works of Mantegna, Lorenzo Costa and Leon Bruno. He especially came under the influence of the latter painter, who had decorated a room immediately adjacent to this library. Unfortunately, this work by Bruno was destroyed by Giulio Romano when this painter received full liberty to renew the decoration of the palace.—*Gazette des Beaux arts*, March, 1895.

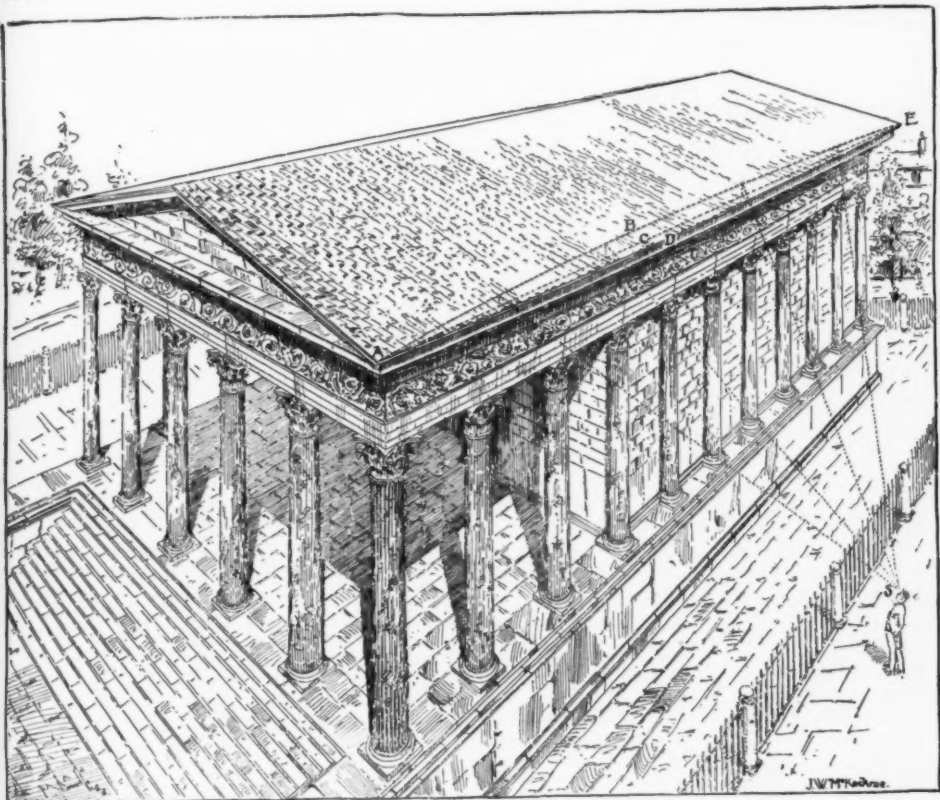
Although a small fragment of the cupola has fallen, the medallions by Correggio are intact. The old fourteenth-century fortress of Mantua, in which the "Studiolo" is situated, was from 1708 to 1866 occupied by the Austrians, who allowed nobody to enter it. The "Studiolo" was afterwards the repository of the archives of the town, which so choked it up that access was almost impossible. The Italian Government, with its usual interest in art, facilitated the researches of M. Yriarte, and he succeeded in examining the frescoes, freed from the dust of centuries, and in photographing them. Reproductions from these photographs are given in the *Gazette*.

PALERMO.—**MOAICS OF THE CAPELLA PALATINA.**—A Russian archæologist, A. Pavlowsky, has made in the *Revue Archéologique* (1894) an elaborate and careful study of the mosaic decoration of this chapel, with a view to ascertaining whether it is executed according to a system in which each part had its significance, and bore a relation to a general scheme. He takes occasion to trace the history of the systematic use of painting in the service of religion, beginning with the fifth century, especially in monuments, in Nola, Rome, Ravenna, Constantinople and in a number of Greek monuments. He concludes that a decoration of this chapel had for its object to represent the history of the church in its most important episodes, and its most zealous members, beginning in the dome by the representation of the glory of Christ in heaven, and ending with that of his glory on earth at the time of the triumph of the elect after the Last Judgment. The writer makes extensive use of analogous cycles of Mosaic and painted decoration of the Middle Ages, both in the East and West, and his treatment is an

advance on previous studies of Christian iconography. He closes by saying: "Thus the Palatine Chapel may be considered as a perfect type of the decorative system of the greater part of Byzantine and Byzantino-Russian Churches."

A. L. FROTHINGHAM, JR.

PRINCETON,
April, 1895.

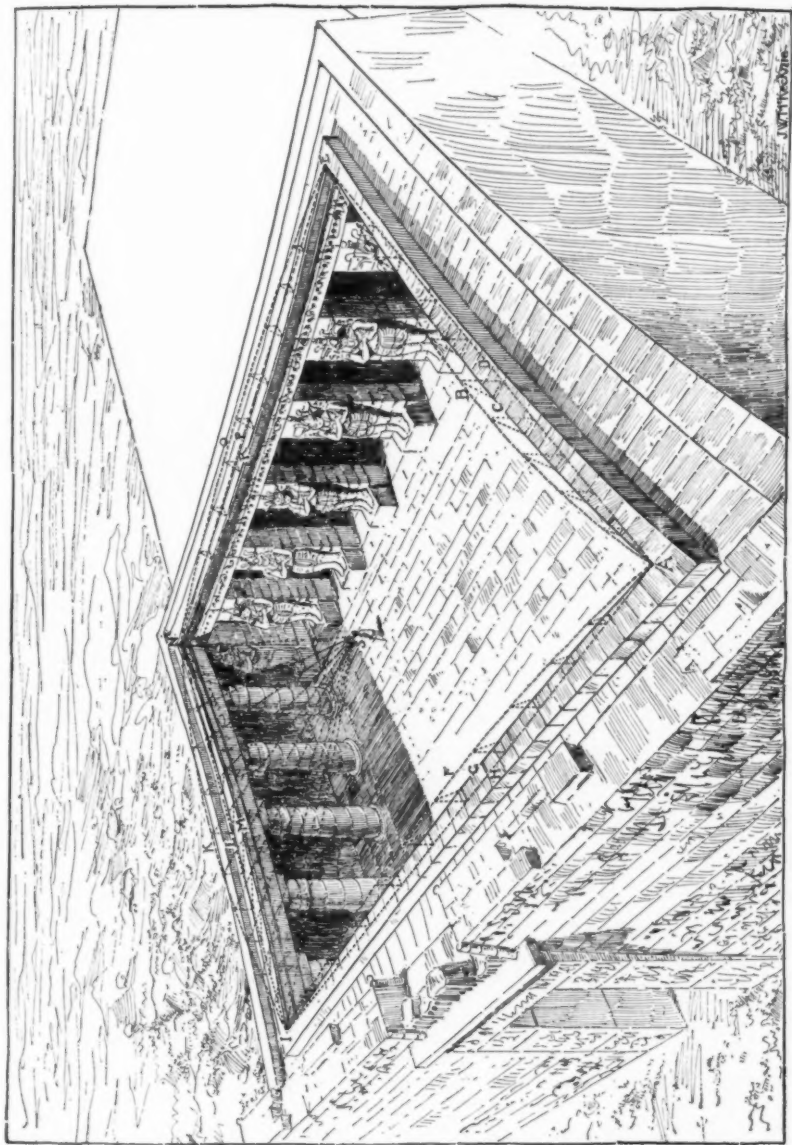


BIRD'S-EYE VIEW OF THE MAISON CARRÉE AT NÎMES.

DRAWN BY J. W. MCKEKNIE.

(Straight dotted lines show deflection of cornice: curved dotted line shows optical effect of cornice curve.)



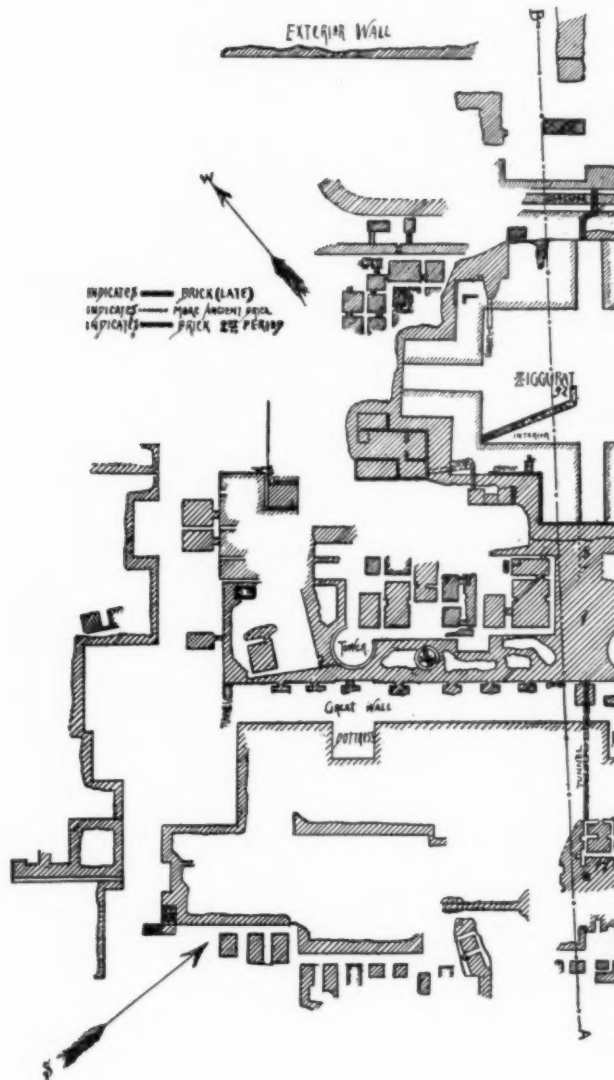


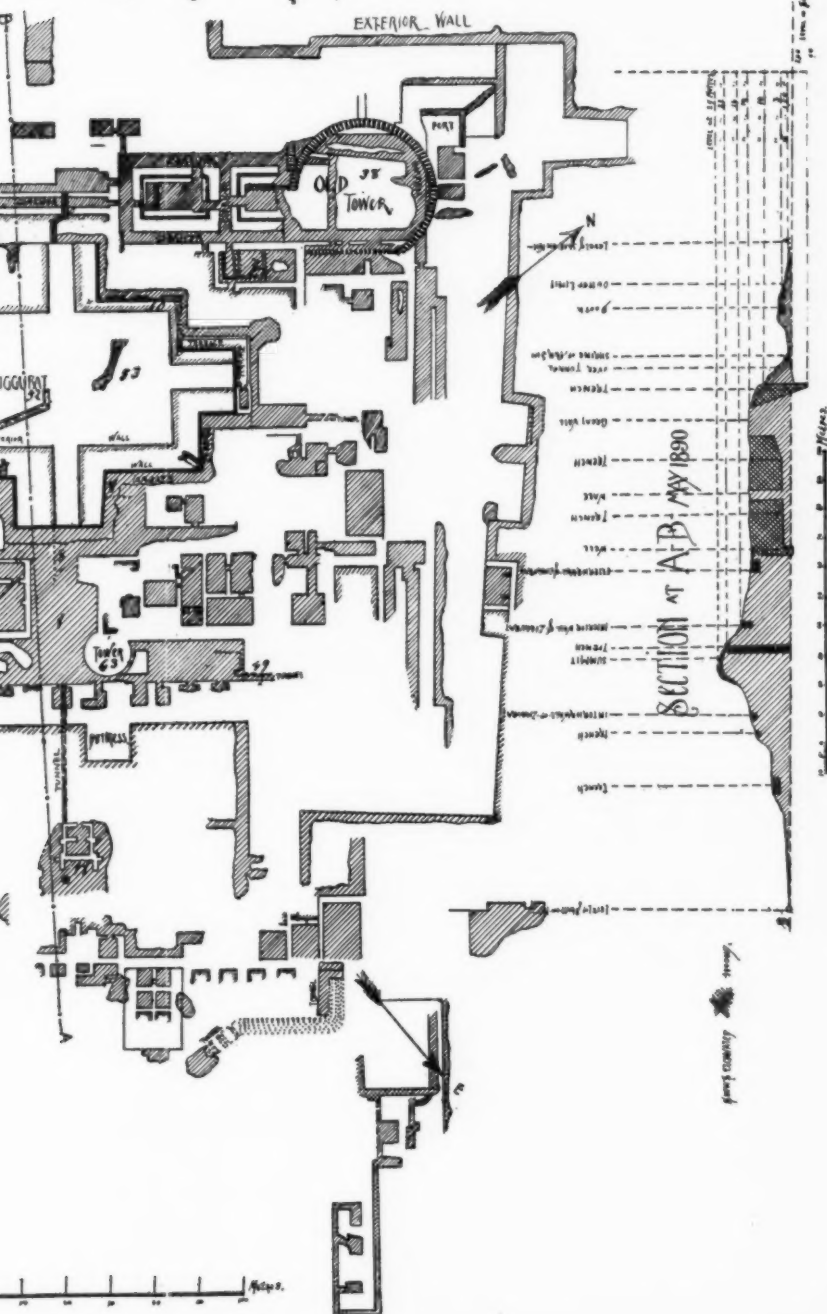
BIRD'S-EYE VIEW OF THE INNER TEMPLE COURT AT MEDINET-HABOU.

DRAWN BY J. W. McKECKNIE.

(Straight dotted lines show curved deflections of cornices; curved dotted lines show optical effect of cornice curves from different points of view.)

Plan of Temple After the Excavation of the Babylon







I. MORTAR AND INSCRIBED BAS-RELIEFS OF PERIOD OF BUR-SIN, C. 2400 B. C.



II. EARLY BABYLONIAN AND LATE GREEK TERRACOTTA FIGURINES FOUND IN TEMPLE OF BEL.